The Golden Hands Encyclopedia of

CRAFTS

The complete guide to
traditional and modern home crafts

Volume 15

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Golden Hands Encyclopedia of CRAFTS

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Marshall Cavendish

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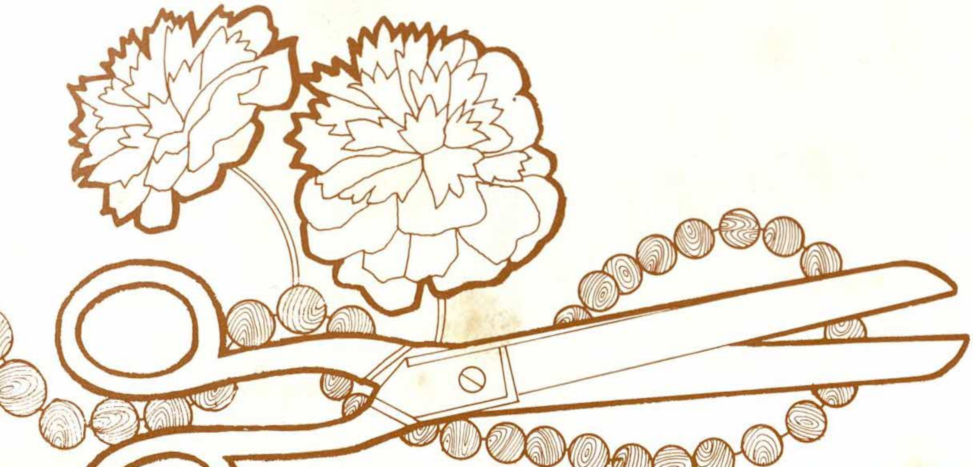

*** Not suitable for children without adult supervision**

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Modelling 6. Tools at hardware and DIY shops.

Edible Arts 8. Marzipan animals made by Ray Hall at Maison Sagne, 105 Marylebone High St, London W1.

Metrication

In this volume you will find two systems of measurement. The first set of figures refers to the metric system and the Imperial figures follow in brackets. Wherever possible, a commonsense approach has been adopted and both sets of measurements have been worked out in round numbers. **BUT BEWARE!** This means that metric and the Imperial figures are *not* equivalent so make sure you only work with one or other set of figures.

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Daisy grow hanging

Here is a way to make learning about metric and imperial measurements fun for children.

You will need:

70cm (27") of 182cm (72") wide hessian in red.

30cm (12") of 182cm (72") wide felt in yellow.

Two 18cm (7") squares of black felt.

One 25cm (10") square of green felt.

Six 23cm (9") squares of blue felt.

Scraps of red felt.

One tape measure with metric and imperial markings on the same side.

Two 64cm (25") lengths of 2cm (¾") diameter dowelling.

Fabric adhesive such as Copydex and sewing thread to match fabrics used.

To make up. Stitch a 1.5cm (½") hem down each long side of the hessian.

Use the photograph as a guide to make card or paper patterns for a daisy head, centre and stalk, a pot, butterfly wings and body.

Cut out as follows:

Six yellow felt daisy heads.

Six black felt centres.

Blue felt for pot.

Two black felt butterfly bodies.

Four blue felt butterfly wings.

Four green curved stalks.

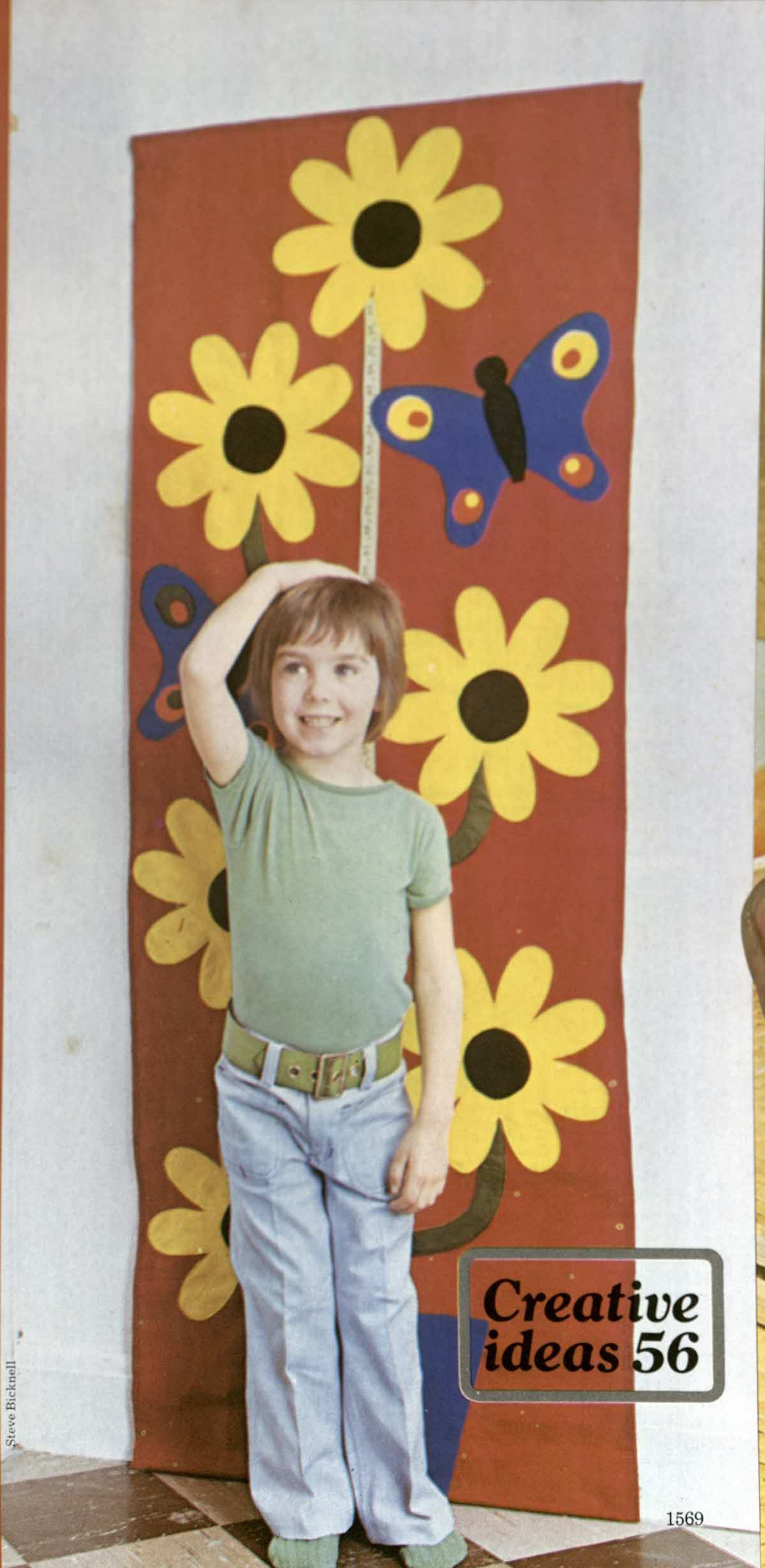
Green, red, yellow felt dots for wing decorations.

Centre tape measure down length of the hessian with the beginning of the tape 5cm (2") from the bottom edge of the hessian. Stitch down centre using a long stitch if tape is plastic.

Position flowers and butterflies as shown, then glue in place. Position bottom of pot level with end of tape measure. Finally, machine or hand sew around the edge of each felt shape.

To finish, turn back 5cm (2") at the top and bottom of the hanging and stitch leaving the ends open to make channels for the dowelling. Slide dowelling through each hem to give a rigid edge.

Hang up so that the bottom edge touches the floor.



Steve Bicknell

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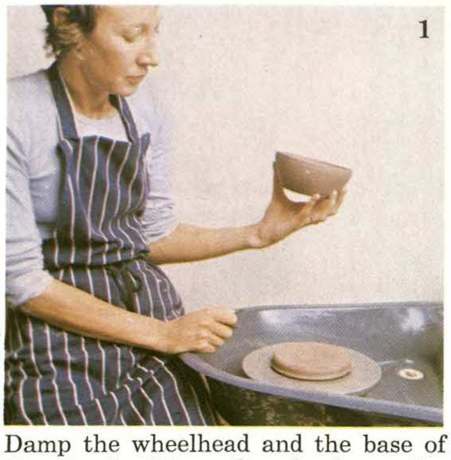
How to turn finished pots

Turning is the name given to the technique of cutting and peeling off layers of clay from a pot at the leather-hard stage. Turning is done on the wheel, and is an essential process in the case of pots which have been thrown thickly. If you can throw a good cylinder, which is light and even, turning may not be necessary, but it is always essential to turn a thrown bowl. Bowls have to be thrown with a thick wall at the base to support the sides as they flare out towards the top. Before it is turned, the shape of the bowl is crude (fig.1). The aim of turning is to cut away the surplus clay, following the inside curve of the bowl, and to cut a foot ring which will give lightness and balance to the finished work.

The chuck

A chuck (fig.1) is a piece of stiff clay shaped to fit and support the inside of the pot around its rim area. The pot sits on the chuck so that its rim does not touch the wheelhead.



Nelson Hargreaves

Damp the wheelhead and the base of the chuck. Place the chuck on the centre of the wheelhead and tap it firmly into place. (The pot will be placed upside down over the chuck.)
The chuck can be saved and re-used so long as you wrap it in polythene between times to prevent it from drying out too much.

Turning tools

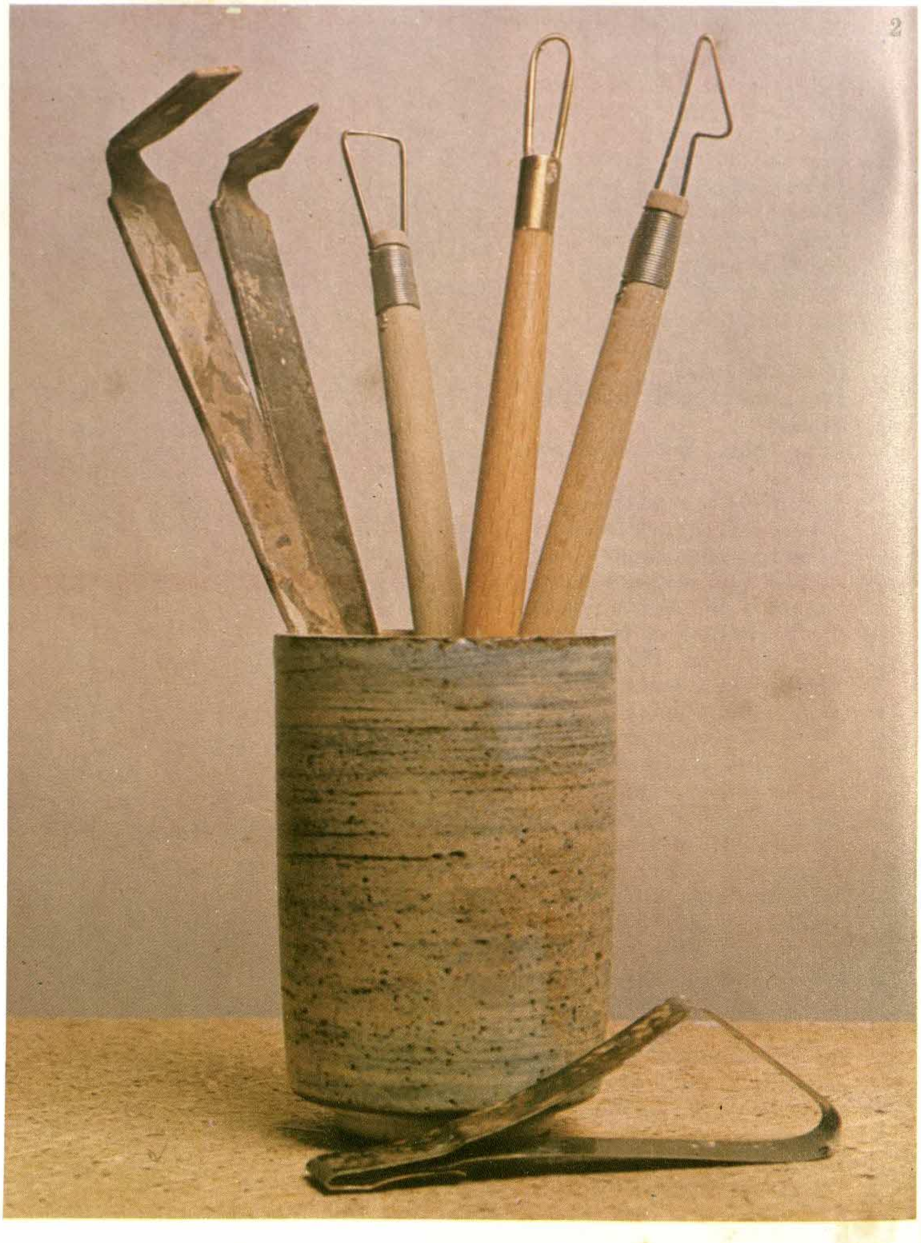
Tools for turning are available from pottery suppliers and, generally speaking, they fall into two categories: those which are made from strip steel or aluminium bent at right angles and are useful for bolder effects, and those which are made from copper wire set in a wooden handle for more delicate work (fig.2). In each case the cutting edge is sharpened at an angle, in the same way as the edge of a chisel.
Personal taste dictates which tool is used for which particular job. In this chapter two wire tools and a home-made hoop iron tool were used.

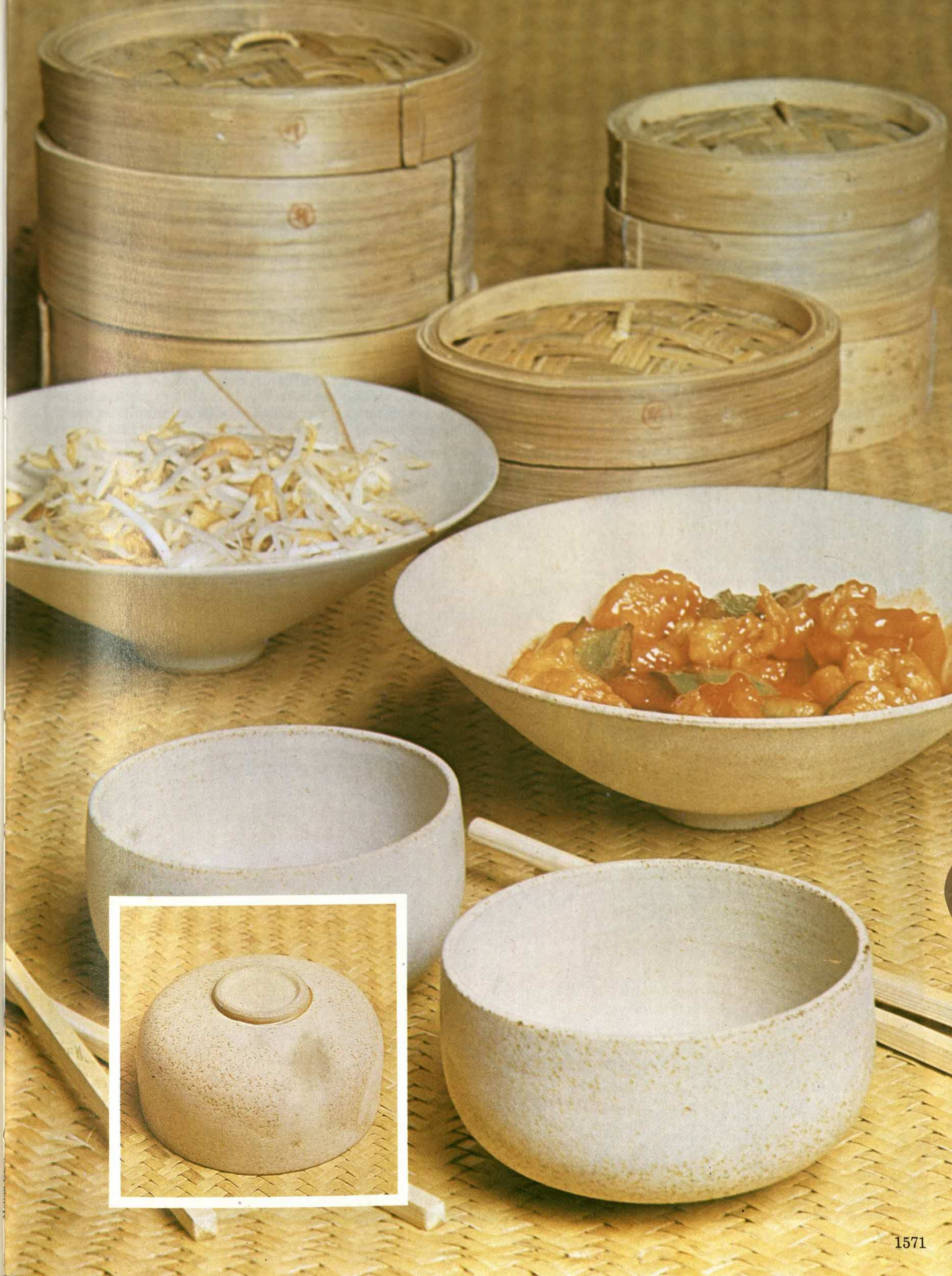
Hoop iron tool. The tool which is lying in front of the pot in the picture was home-made from a piece of hoop iron taken from an old packing case.
☐ To reproduce it, take a piece of hoop iron about 2cm (¾″) wide and 15cm (6″) long and use a pair of pliers to turn it into a triangle as shown, folding over ends. Sharpen the sides on a sharpening stone.

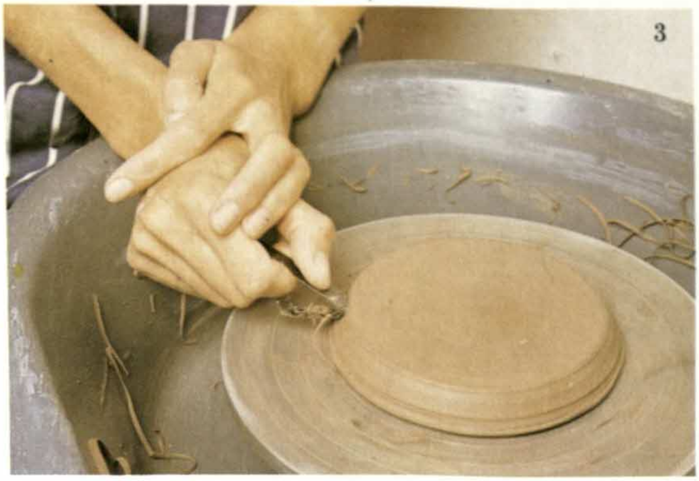
Turning a bowl

You will need:
Wheel.
Chuck.
Bowl at leather-hard stage.
Turning tools.
Needle set in cork.

Right: delicate bowls, designed by Val Barry, had to be thrown with solid, clumsy bases. Only after being turned did their elegant outlines emerge. Inset shows detail of foot ring.



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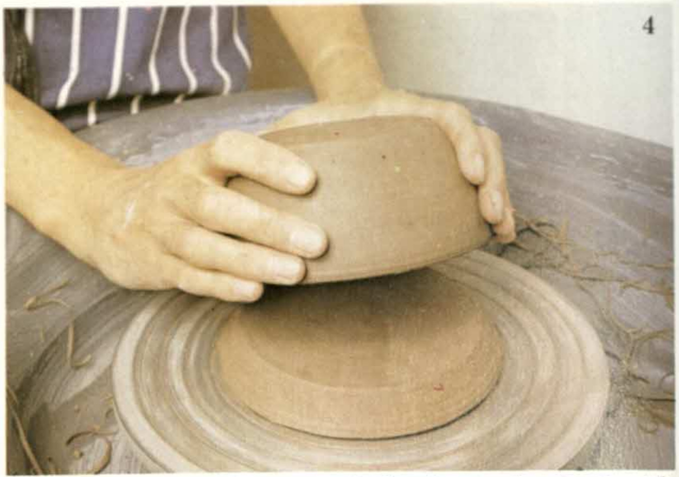
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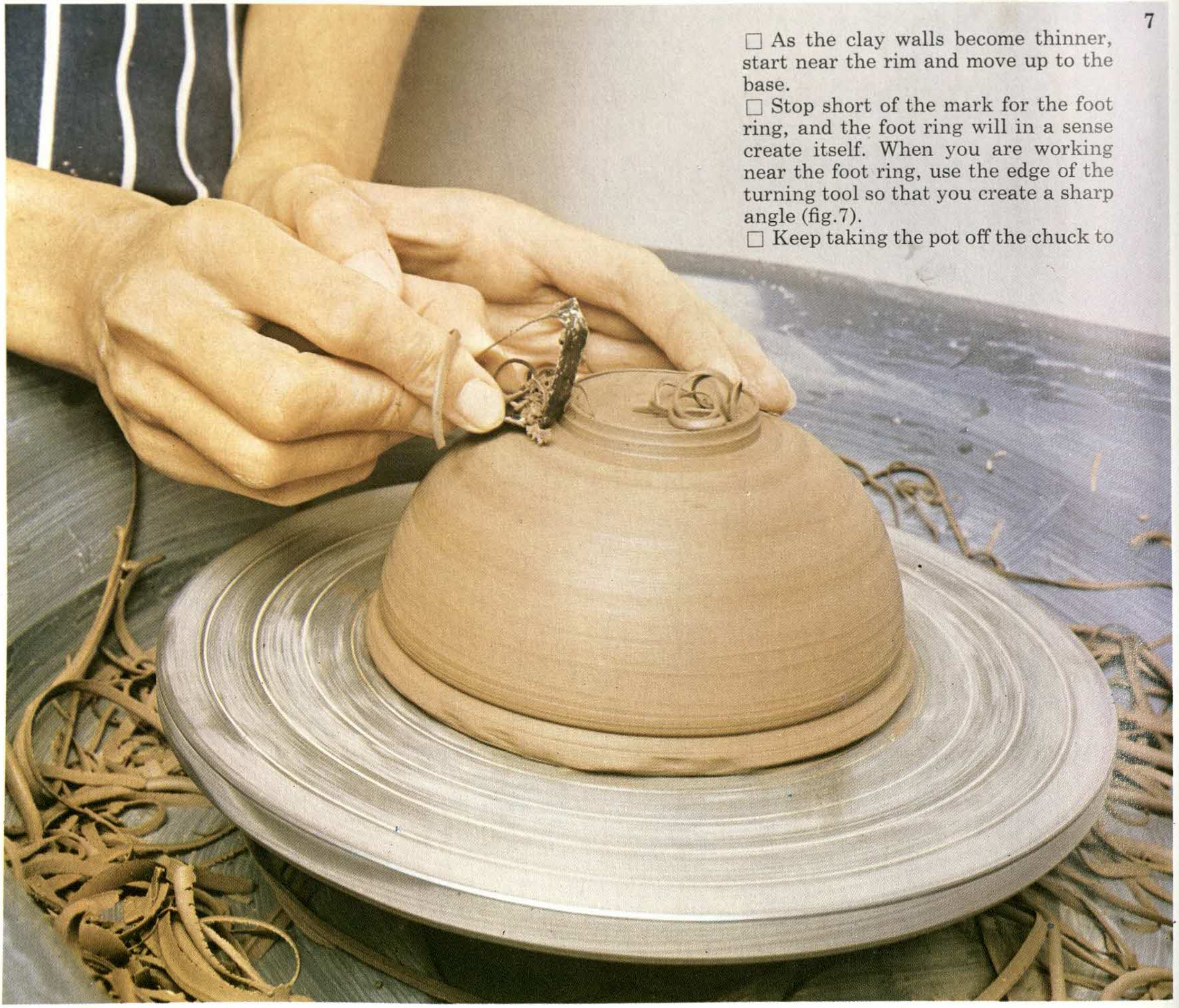
☐ Pare away clay from the chuck until it fits the inside of the bowl, remembering that the chuck should become narrower towards the top (fig.3).

☐ Keep testing the size with the bowl (fig.4). The bowl must fit firmly on to the chuck, upside down, and covering it by about 2cm ($\frac{3}{4}''$).

☐ Make a mental note of the inside shape of the bowl, and feel the thickness of the walls so that you will have an idea of how much clay to cut away.

☐ Lower the bowl on to the chuck with the wheel spinning fairly fast. The bowl must be perfectly centred on the chuck. If it is not, it may even fly off the wheel. You will be able to see at once whether or not it is centred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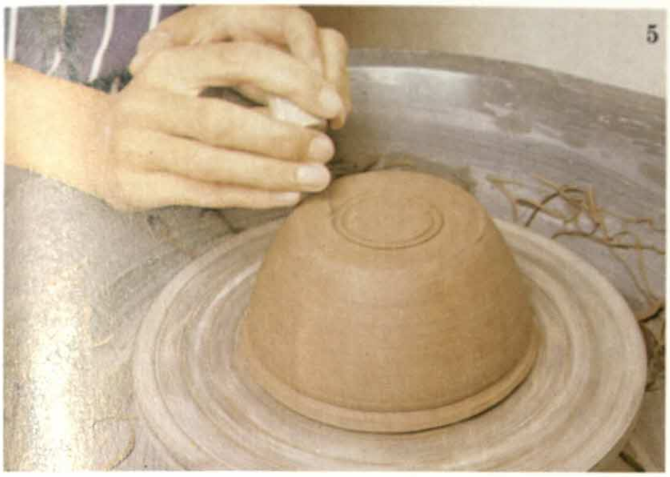
☐ As the clay walls become thinner, start near the rim and move up to the base.

☐ Stop short of the mark for the foot ring, and the foot ring will in a sense create itself. When you are working near the foot ring, use the edge of the turning tool so that you create a sharp angle (fig.7).

☐ Keep taking the pot off the chuck to

Nelson Hargreaves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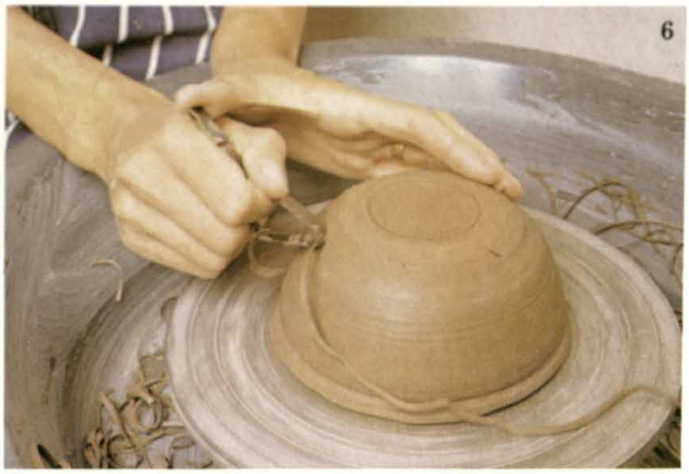
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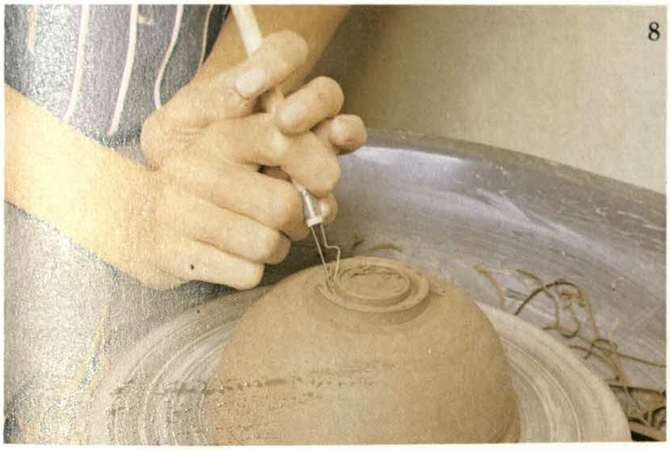
because if it is not it will bump up and down. You may have to remove and replace the bowl several times before you get it right.

☐ Use the needle set in a cork to mark where the foot is to go (fig.5). The size of the foot is entirely a matter of taste and design, but remember that it must be in balance with the shape of the bowl.

☐ Gently supporting the bowl with the left hand, hold the side cutting edge of the hoop iron turning tool against the pot and gradually pare away the surplus clay. Start where the clay is thickest, about half way up, and gradually move the hand upwards towards the base (fig.6).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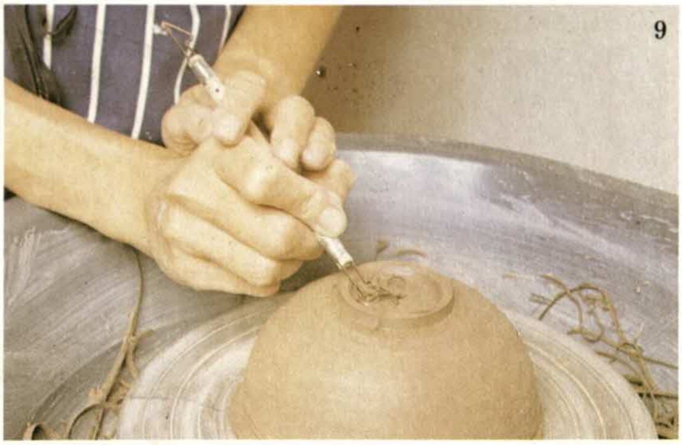
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check the thickness of the walls and the shape. If you cut away too much clay, you will destroy the pot.

☐ Use the pointed end of a wire tool to work out the centre of the foot ring (fig.8).

☐ Use the rounded side of a wire tool to remove the surplus clay from the centre of the foot ring (fig.9).

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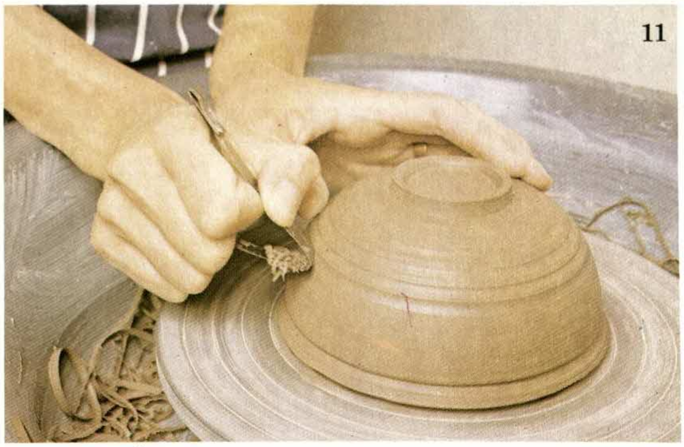
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☐ Before you decide that the turning process is complete, hold the pot the right way up to check the size and balance of the foot ring. Check the thickness of the walls by eye and also by very gentle pressure with the fingertips, (fig.10). If necessary, cut away a little more clay.

Decoration

It is in the nature of turning that only a limited amount of decoration can be achieved. All you can really do is to cut a series of concentric grooves on the outside of the pot (fig.11). However, you can vary the number, width and arrangement of the grooves to create attractive designs.

Polystyrene lamp base

Plastics 20

Polystyrene often comes in small blocks or offcuts, sometimes as packaging material which can be re-cycled into useful and inexpensive objects such as the lamp base made in this chapter. Polystyrene is a very light material so the addition of a wood core gives solidity to the base while polystyrene tiles provide an attractive veneer.

Lamp base

The lamp base overleaf has a spherical glass shade, but you could just as well fit it with a drum shade.

You will need:

Softwood, two pieces 50mm x 25mm (2″x 1″), 15cm (6″) long.
Polystyrene, two pieces 15cm x 15cm x 5cm (6″x 6″x 2″) and two pieces 15cm x 5cm x 5cm (6″x 2″x 2″).
Seven polystyrene tiles (preferably with bevelled edges), 15cm x 15cm (6″x 6″) or cut larger tiles to size.
A lamp fitting and screws to attach the fitting to the wood.
Length of lamp flex.
Card, 15cm x 15cm (6″x 6″).
Felt, 15cm x 15cm (6″x 6″).
Cream emulsion paint.
Poster colours in white and amber.
Liquid detergent.
A cellulose filler such as Polyfilla.
Medium grade glasspaper.
Latex adhesive and PVA adhesive.
Electrical plug and light bulb.
Insulated electrical staple.
Two rubber bands.
Sharp knife such as a Swann-Morton scalpel.
A battery-type hot wire polystyrene cutter if the polystyrene is not already cut to size.
Hammer, wood chisel and screwdriver.

1. *The polystyrene wire engraving tool used to engrave the lion's head.*

Wire engraving tool (fig.1).
Bunsen burner or burner on gas cooker.
Two 2.5cm (1″) brushes.
Orange stick or toothpick.

☐ Using a hammer and chisel cut a groove large enough to receive the flex vertically down the centre of both pieces of wood (fig.2).

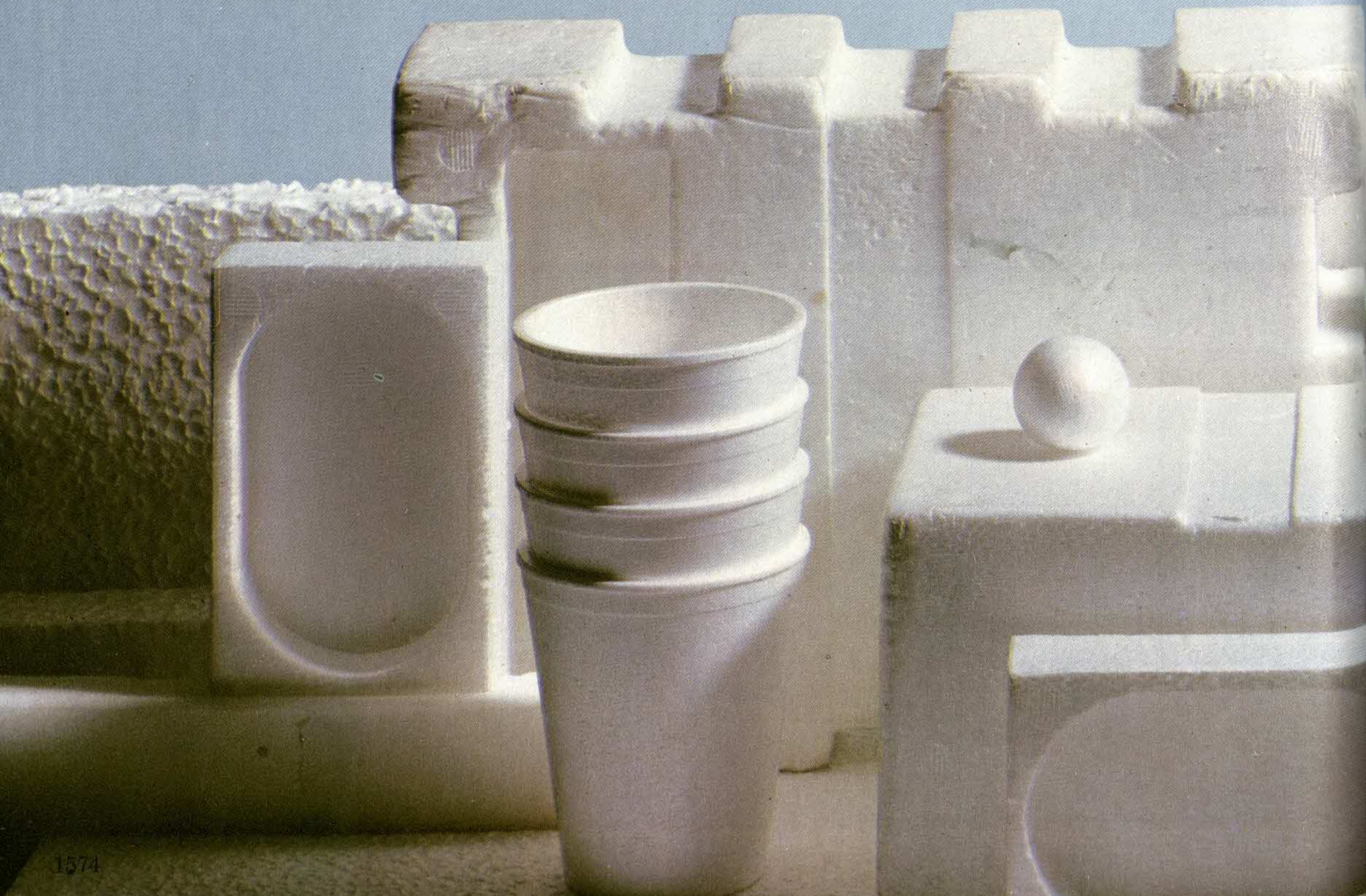
☐ Cut another groove out of the underside of one of the pieces of wood to lead the flex away.

☐ Glue the wood together with PVA adhesive. Slip rubber bands round the pieces to hold them in place while the adhesive hardens.

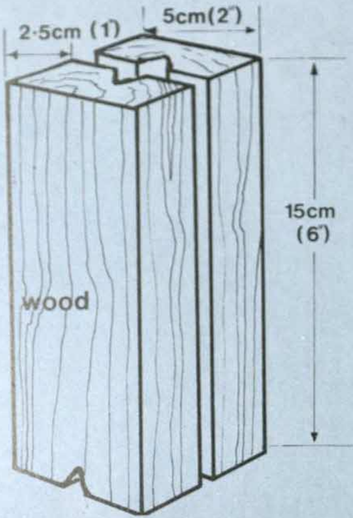
☐ Join one end of the flex to the lamp fitting and thread the other end through the channel in the wood.

☐ Secure the lamp fitting to the top of the wood.

☐ Hammer an insulated staple around



A selection of polystyrene shapes. Some of these such as the pieces of packaging and the coffee cups can be recycled to make attractive and inexpensive objects. Other special shapes such as the balls must be bought new.



Trevor Lawrence

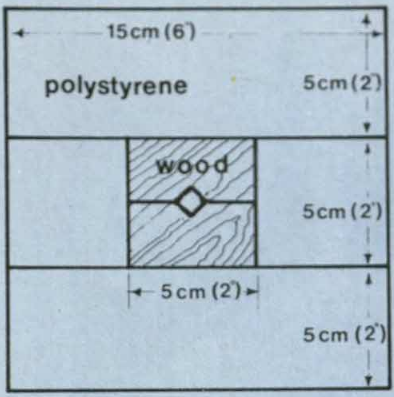
2. *Wood core of the lamp base showing the groove down the centre and along the underside to accommodate the flex.*

the flex and into the underside of the wood so that the flex is kept flat. Make sure that the staple is level with the surface of the wood.

Now you are ready to clad the wood with polystyrene.

☐ Assemble the pieces of polystyrene around the wood core as shown in fig.3, or cut to size with the wire cutter and then assemble.

☐ After ensuring that the polystyrene fits and the edges are level coat all the inner surfaces with latex adhesive and stick together.



3. *The wood core is surrounded by pieces of polystyrene.*

☐ Cut four ceiling tiles with a sharp knife to fit the sides of the base and bevel the edges of the tiles with glass-paper if necessary.

☐ Coat the inner surface of the tiles with latex adhesive and stick to the sides of the base.

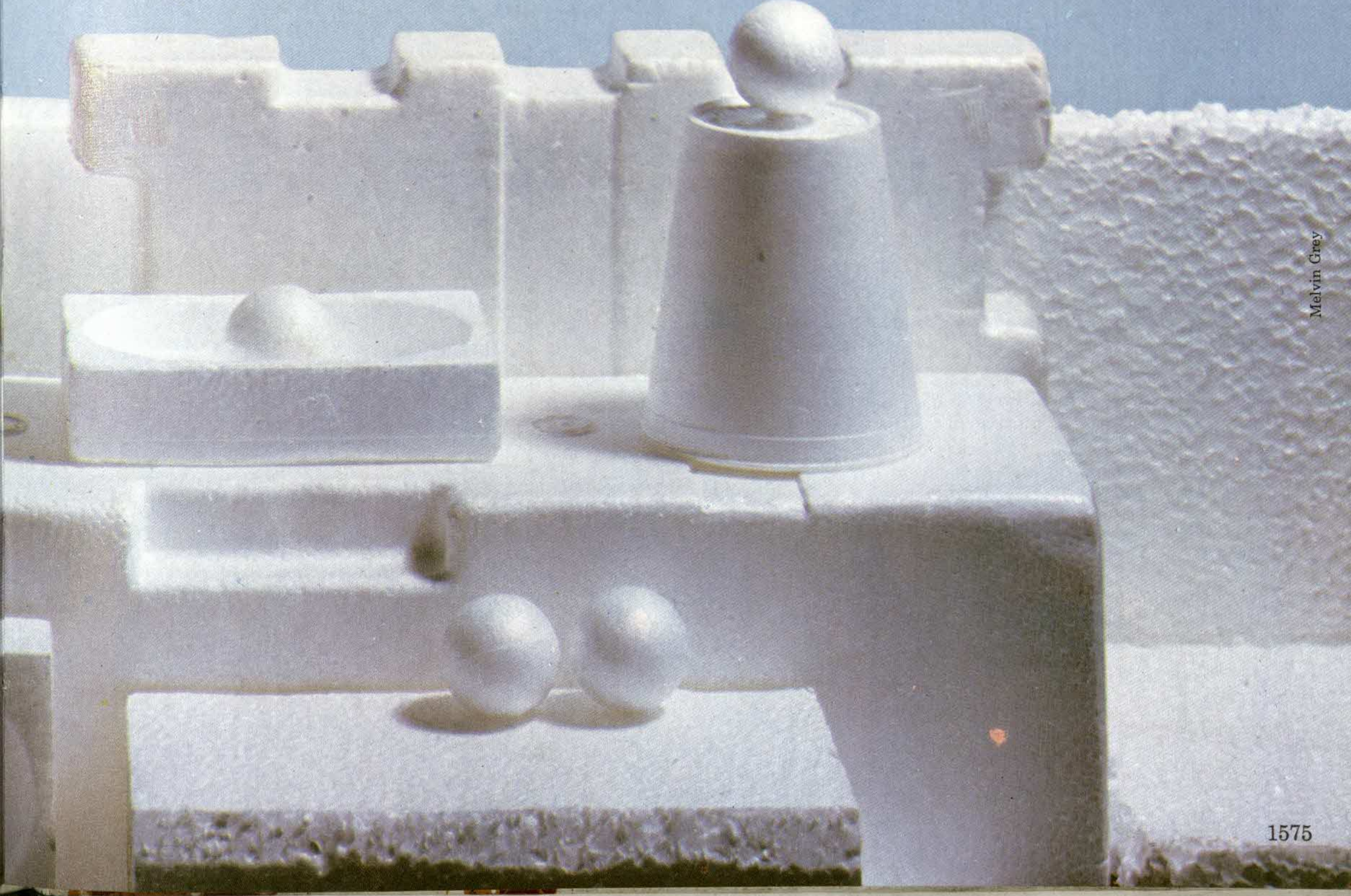
☐ Cut another ceiling tile the same size for the top and bevel the edges.

☐ Cut a hole in the middle of the tile, unscrew the top of the lamp fitting, coat the underside of the tile with adhesive and stick in position. Replace the top of the fitting.

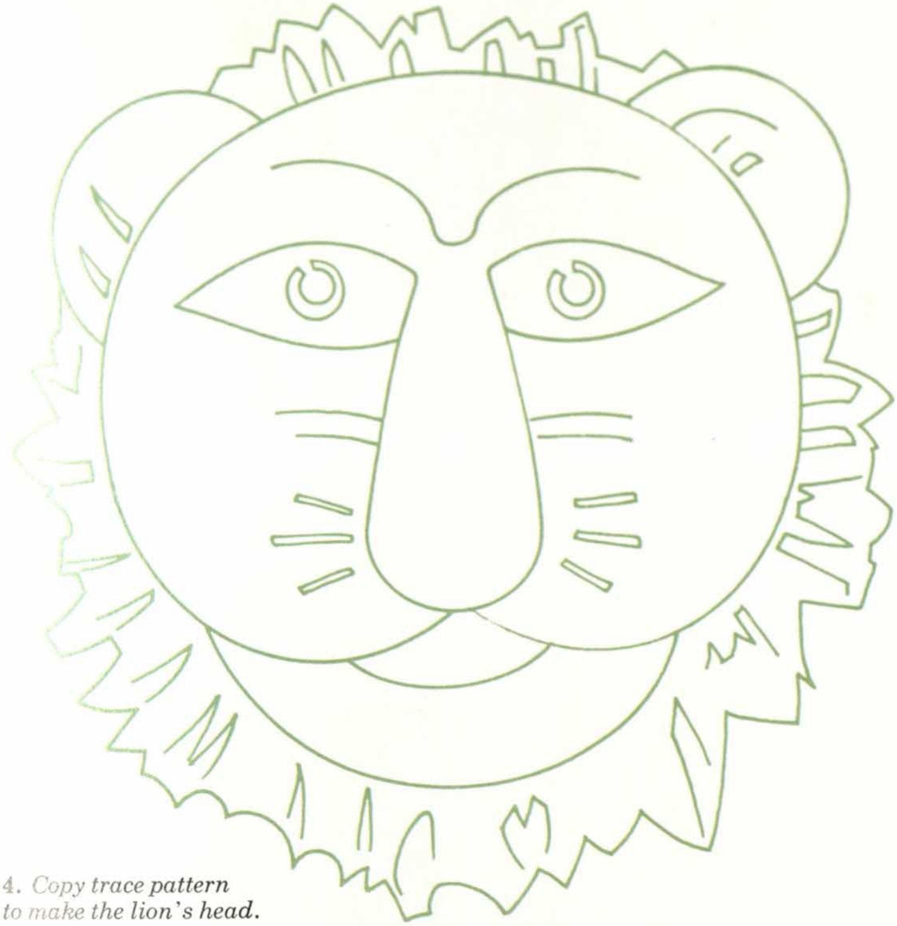
Cover the base with polystyrene tiles.

The lion's head is stuck on next.

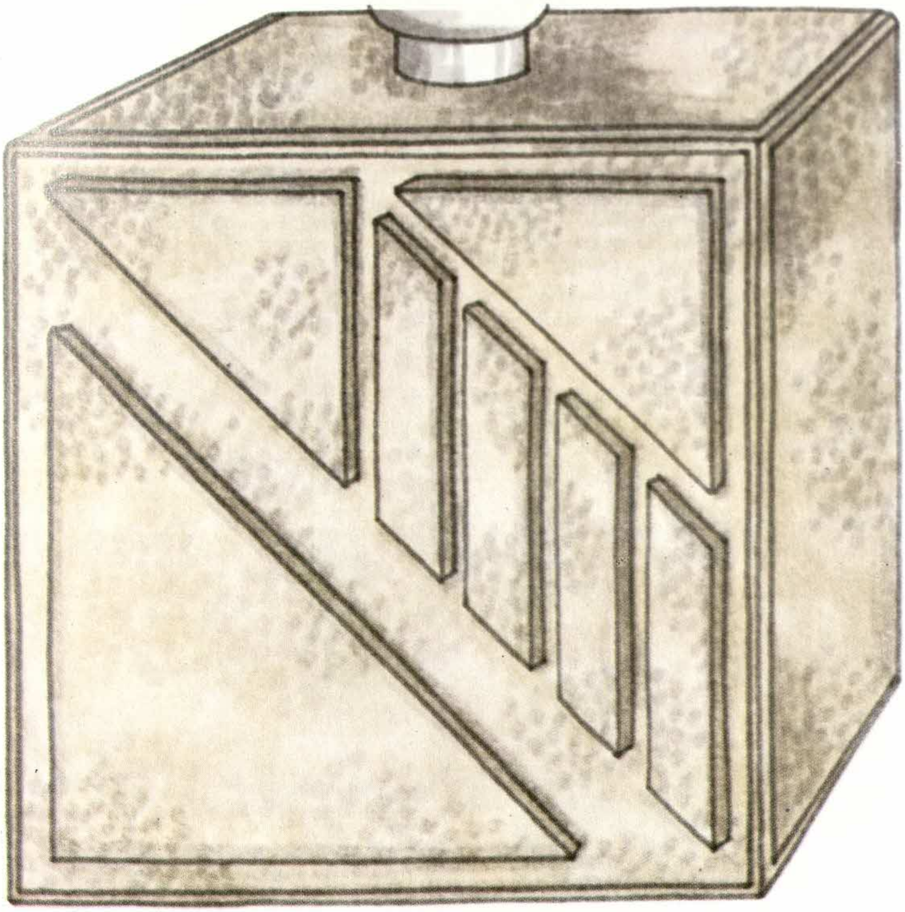
Ray Duns



Melvin Grey



4. *Copy trace pattern to make the lion's head.*



Jerry Tubby
Victoria Drew

☐ If the top of the fitting will not unscrew cut the tile straight down the middle. Cut a small piece out of the middle of each cut side to accommodate the lamp fitting.

☐ Coat the underside of the polystyrene with adhesive and also thinly coat the two cut edges. Fit in position round the lamp fitting and stick down. The cut edges will be hidden by the finish.

A lion's head. Once the basic lamp base has been made you can embellish it with any cut-out relief shapes you wish—such as the lion's head illustrated here (fig.4).

☐ Cut out an outline of the shape (the mane) on a ceiling tile. Then cut out a slightly smaller face and then other features such as cheeks and nose.

☐ Position and stick the shapes to each other.

☐ Texture the mane with the engraving tool. Heat up the engraver and press lightly on the surface of the polystyrene which will melt (see Plastics chapter 16, page 1364).

☐ Engrave features on the face such as eyes. Engrave a border if you wish round the lamp base.

☐ Stick the lion's head to the base.

The finish. This lamp base is given a sandstone finish but many other finishes such as metal and wood are possible (see Plastics chapter 18, page 1508).

☐ Mix up emulsion paint with white and amber poster colour for a muddy, sandy finish. Add a little liquid detergent; this helps the polystyrene to absorb the paint. Paint all over the base.

☐ Let the paint dry then mix up the same coloured emulsion with Polyfilla: about one part Polyfilla to two parts paint. Add the paint slowly to the Polyfilla to avoid lumps forming.

☐ Apply this second coat to the lamp base.

☐ Using an orange stick or toothpick clean the Polyfilla and paint mixture out of the engraved parts.

☐ With a little white poster paint, dry brush the surface following the technique in Plastics chapter 18, page 1508. Then dry brush again with amber paint.

☐ Finish off the bottom of the lamp base. First stick card to the bottom with PVA or latex adhesive.

☐ When dry, stick felt to the card for a smooth finish which will not scratch the furniture.

Left: an alternative design for the lamp base. An abstract shape is used instead of the lion's head and the base is given a brass textured finish. Use one of the two designs given here or make up your own.

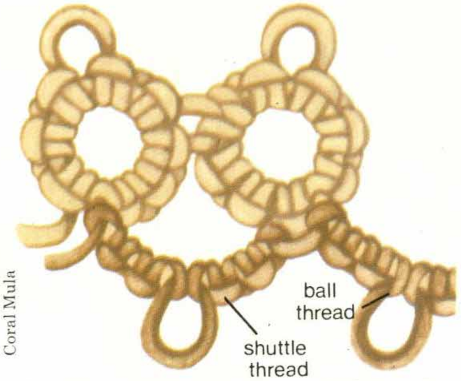
Far left: the finished lamp base makes an attractive table or bedside lamp. Designed by Anne Gurney.

Combining chain and rings

Some of the most attractive tatting patterns are formed by combining chains (Tatting chapter 1, page 1518) with rings (Tatting chapter 2, page 1546). Although the chains are worked with two threads and the rings with one, it is not difficult to switch from one technique to another in a pattern, provided you remember which is the working thread and which will be forming the transferred stitches.

The easiest way of remembering this is to work with yarns of different colours, winding one colour on to the shuttle and working with the other colour direct from the ball. This produces an attractive effect, with the rings formed in the shuttle thread and the chains in the ball thread.

In many tatting patterns rings and chains are worked alternately, in which case the chain takes the place of the loop linking the rings (fig.1). The rings are also usually linked at corresponding picots as shown here and described in the previous Tatting chapter.



1. *The chains form a linking loop between the rings.*

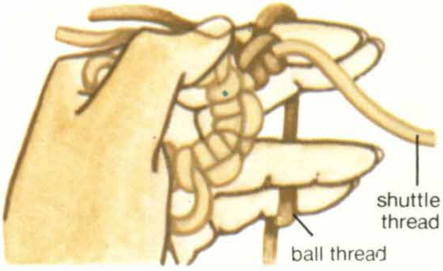
Coral Mula

Making a practice piece. The simplest way to begin is to make a practice piece using fine string or thick crochet cotton of different colours. Wind the yarn of one colour on to a shuttle (or into a butterfly round your fingers) and use the other colour direct from the ball.

☐ Using the shuttle alone, make a ring of three double stitches, one picot, two double stitches, one picot, three double stitches. Close the ring.

☐ Turn the ring upside down so that the shuttle is on the right. Hold the thread from the ball alongside and above the shuttle thread. Then place both the ring and the ball thread between your left thumb and forefinger and loop the ball thread over the back of your left hand and round the little finger.

☐ Using the shuttle, make a double stitch over the ball thread. Transfer the loops so that they are formed by the ball thread and push them up close to the ring (fig.2). Work two more double stitches, one picot and three double stitches to complete the chain. Reverse the work again so that the ring is above the chain and the shuttle is still to the right.



2. *Pushing up the first stitch of the chain close to the ring.*

☐ Leaving the ball thread hanging, use the shuttle alone to make a second ring. Start the ring with a double stitch, pushing it close to the chain. Work two more double stitches in the same way, join the ring to the second picot of the first ring (see Tatting chapter 2, page 1546), and complete the ring with one double stitch, one picot and three double stitches. You will now see how the chain forms the link between the rings.

☐ Reverse the work and make a second chain like the first one.

Reading patterns

As with knitting and crochet, printed tatting patterns are always abbreviated. Examples are: r (ring); ds (double stitch); p (picot); ps (picots); smp (small picot); lp (long picot); cl (close ring); rw (reverse work); ch (chain); tog (together); sep (separated); rep (repeat).

In a pattern you might come across: r of 4 ds, 2 ps sep by 4 ds, 4 ds, cl.

This means: a ring of 4 double stitches, 1 picot, 4 double stitches, 1 picot, 4 double stitches, close ring.

Mounting tatting

Motifs. If you are applying tatting to fabric, the simplest way is to stick it lightly with a fabric adhesive. Alternatively you can sew it with a couple of small oversewing stitches placed between double tatting stitches on each side of the motif.

Edgings. Prepare the fabric by forming a narrow hem all round the edge. Sew the edging to the hem at suitable points with neat oversewing stitches. Be careful to keep the edging flat.

Two-tone edging

The instructions are for a trimming 1.9cm (¾") deep with each individual motif 1.3cm (½") wide. You can easily work the required number to fit cuffs, a handkerchief or even a tray cloth and napkins.

In a medium-fine crochet cotton you will use about 1.80m (2yd) of each colour to make 7.5cm (3") of the edging.

You will need:

Crochet cotton No.20, one ball (20gm) each for main colour and contrasting colour.

Tatting shuttle.

Sewing thread to match foundation.

☐ Wind the contrasting yarn on to the shuttle and use the main colour straight from the ball.

Work all the rings with the shuttle thread only and the chains with the shuttle thread over the ball thread.

1st row. Tie thread from the ball of main colour and shuttle threads together at one end with an overhand knot.

Basic motif. * R of 5 ds, 3 ps sep by 3 ds, 5 ds, cl, rw. Ch of 3 ds, 2 ps sep by 4 ds, 3 ds, rw. Repeat from * for required length or to within 6mm (¼") of corner.

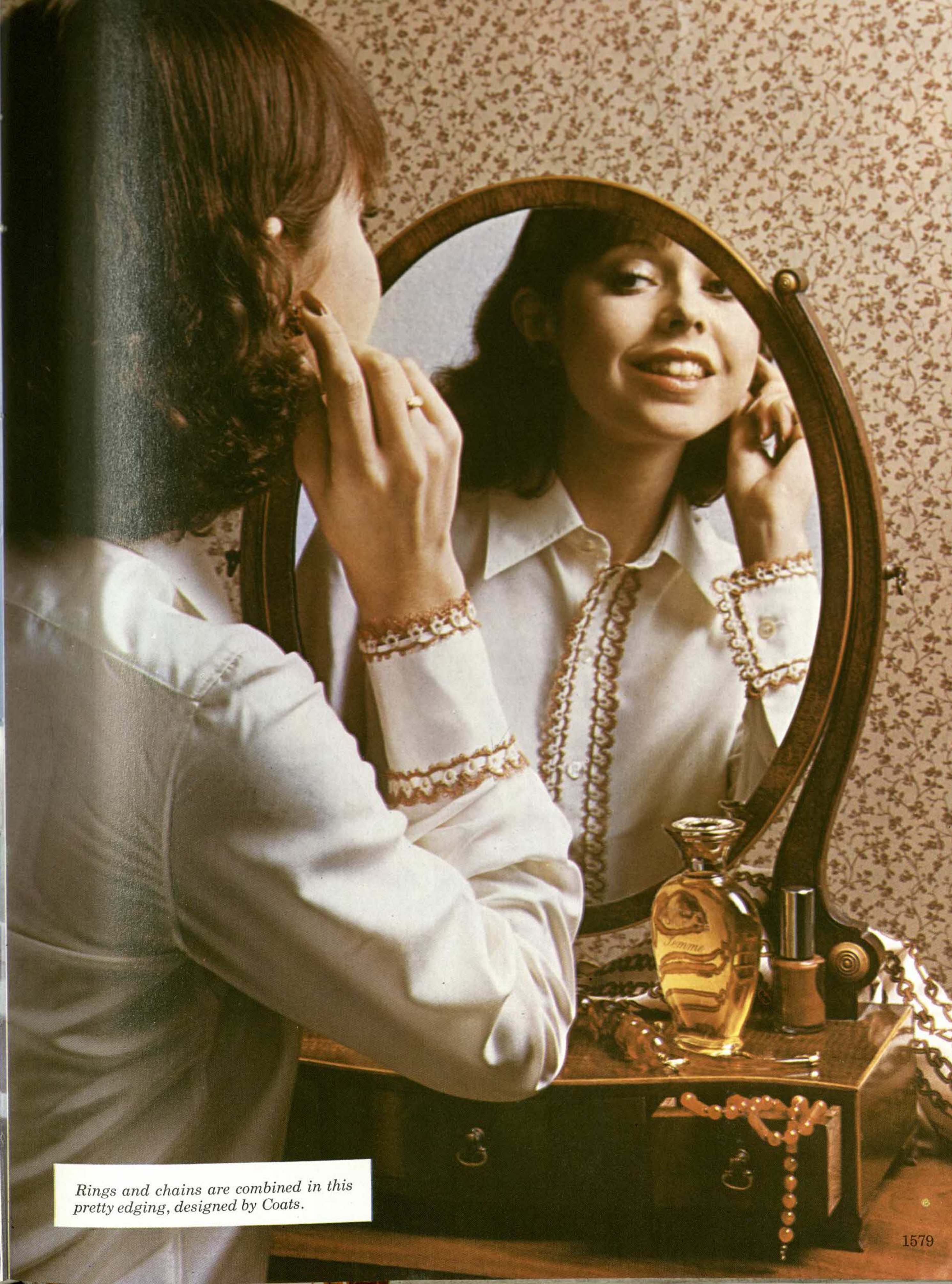
Corner motif. R as before, rw. Ch of 5 ds, smp, 5 ds, rw. R as before, rw. Ch of 5 ds, join to smp on previous ch, 5 ds, rw.

Continue working the basic motif for the required length with the corner motif as necessary. To finish, join the last stitch of the last chain to the base of the first ring. Tie the ends of the yarn together, cut and oversew neatly on the wrong side.

2nd row. Tie the ball and shuttle threads together. Attach ball thread to third p of any ring. * Ch of 3 ds, join by shuttle thread to first p on next r. Ch of 2 ds, 5 ps sep by 2 ds, 2 ds miss next p, join by shuttle thread to next p. Rep from * to end including corner motifs (below) where necessary.

Corner motif. Ch of 3 ds, join by shuttle thread to first p on corner r. Ch of 2 ds, 8 ps sep by 2 ds, 2 ds, miss next p, join by shuttle thread to next p.

Melvyn Grey



Rings and chains are combined in this pretty edging, designed by Coats.

Painting scenic murals

Colour — paint 19

The earliest pictures in houses were murals or frescoes painted directly on to walls to give the impression of exterior views seen through false windows and doorways. In fact, the word *alfresco* means 'outdoors'.

Today it is possible to create similar illusions but these can be accomplished using simpler techniques both in design and application than were used by craftsmen of the past.

Designing murals

The chief effect of scenic murals is to alter the spatial effect of a room by 'opening it up' but several factors must be considered before proceeding to paint one.

The space available is a prime consideration. A mural might occupy a small alcove, an entire wall or ceiling or it might be extended to include the whole room as in the nursery mural shown. Doors and window frames could also be incorporated into the design.

The scale of the images is also very important and must be planned in relation to the height of the room. The placement of windows, doors and furniture must also be borne in mind. Therefore, always plan the design to scale on paper first so that the finished mural will fit the space allotted and the proportions of images will be suitable to those of the room.

Continuity. Another important consideration is the use of the room involved and its existing mood. Obviously a Chinese garden with a pagoda would not be appropriate on the wall of a rustic cottage.

Transferring the design

Traditionally, frescoes were applied to damp plaster so that paint and plaster mixed together for greater durability. The design was sketched first on paper and each section enlarged to the appropriate size, then tiny prick marks were made with a pointed instrument along the sketch lines. Next each section was held in position against the wall and charcoal was rubbed through the holes to register the guidelines.

Happily, there are less complex methods of applying wall designs today and assuring a degree of longevity.

Right: green pastures, blue skies and favourite animals can turn the confines of the nursery into a child's paradise. Lorraine Johnson is the originator of this fancifully painted room. It can be re-created to suit any child's room without much effort and motifs can be carried over to furniture too. (See Painting chapter 7, page 942 for detailed instructions for the chest.) Below: pussy cat is easily copied.

Jerry Tubby

Sketches and tracings are still necessary however. Initially, tracings can be made from scenes in books or simple sketches can be drawn freehand and then be enlarged to the appropriate size. To transfer the design cut out the enlarged sections, then hold them in place against the wall and draw round them with a light pencil or coloured chalk.

Projection is another useful method if the subject is chosen from a transparency. Slide projectors automatically enlarge an image. The outline can then be sketched for filling in later or the scene can be painted on the wall directly as it is projected. (Paint chapter 6, page 780, describes this process in detail.)

Freehand drawing. Simple images are the easiest to work with and, using coloured chalk, any details can be re-sketched and to some extent rubbed out. In primitive or naive subjects, such as the nursery mural shown, a certain amount of freehand sketching is an advantage.

Paint

Although enamel paints are the most durable wall finishes they are difficult to use because they are inclined to drip. Therefore water-based or emulsion paints are preferred.

When designing a mural, it is worth choosing colours which can be easily obtained in emulsion in the quantities you require. Emulsion paints can also be intermixed to produce subtle shading or an altogether different hue.

Protection. To protect the surface of the mural when completed, two coats of polyurethane varnish can be applied in matt or gloss finish.

Preparing the surface

Always make sure that the area to be painted is in proper condition to receive paint. Repair and prime any flaking paint or plaster (new plaster must always be primed before paint is applied) and wash the wall if it has not been recently painted so that all grime is removed. It is normally advisable to start with a white base so that any colours applied on the wall will not be affected by the tone underneath.

Nursery mural

Waking up to blue skies and green fields is undeniably pleasant and the simplicity of the landscape in this design makes it possible to reproduce the design without much skill.

The design must be adapted to the size and shape of the room to be painted and the animals and trees arranged accordingly. Therefore sketch the design to a smaller scale on paper first, arranging or re-arranging the figures to suit the particular room.

Right: animal outlines can be traced and enlarged for transfer. Give each sheep individuality by drawing the ripples of the coat freehand.

It may also be a help to enlarge and cut out the animal shapes and experiment with their arrangement by taping them in different locations in the room.

Outlining the design. Use coloured chalk and begin by drawing a line which will divide the grass and sky. Do this freehand since an undulating line is required. Note that to repeat the scale of the mural shown the line should be drawn to make about two thirds of the wall represent grass and one third represent sky.

The clouds should be outlined next by drawing round plates and saucers pressed alternately against the wall (and ceiling) to get the fluffy curves characteristic of clouds. Observe the effective way in which some clouds in the room shown are painted half on the ceiling and half on the wall to increase the three-dimensional feeling of the sky overhead.

Next sketch in freehand a few small, rounded bushes on the horizon and add the simplified large trees in the foreground in the same way.

Then, having enlarged and cut out the outlines of the animals and flowers, position the patterns to the wall in the desired places and draw round.

Again, use a little ingenuity to give each sheep an individual ruffle in his coat. The more freehand drawing used throughout the better the result.

When arranging the figures be sure to make an allowance for the grass border along the skirting board which will be painted later.

Painting. Begin with the blue sky, taking as much care as possible not to overlap on to the cloud areas.

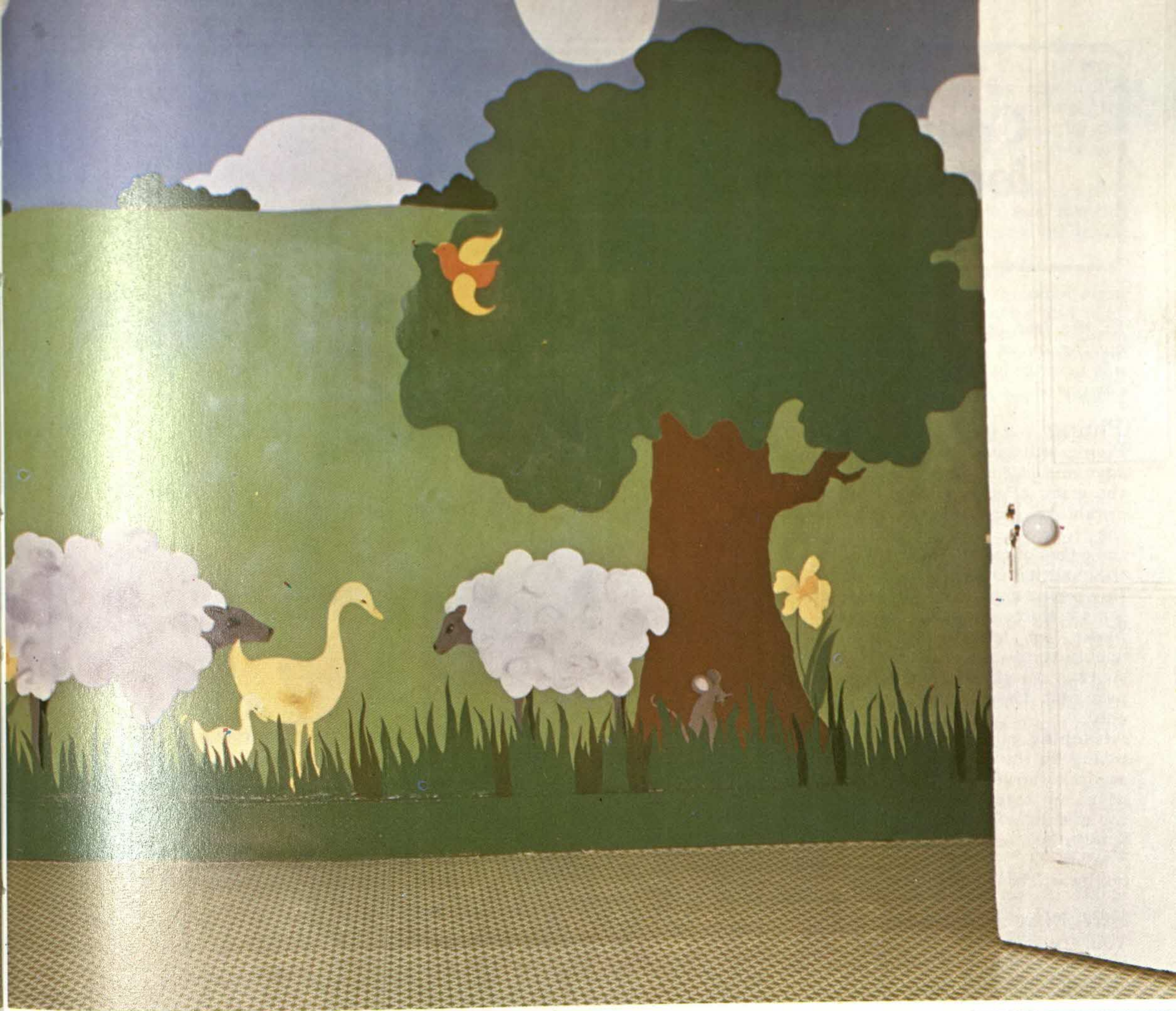
Two coats will doubtless be required throughout but if you are careful the clouds can remain the white background colour of the wall and will not have to be repainted.

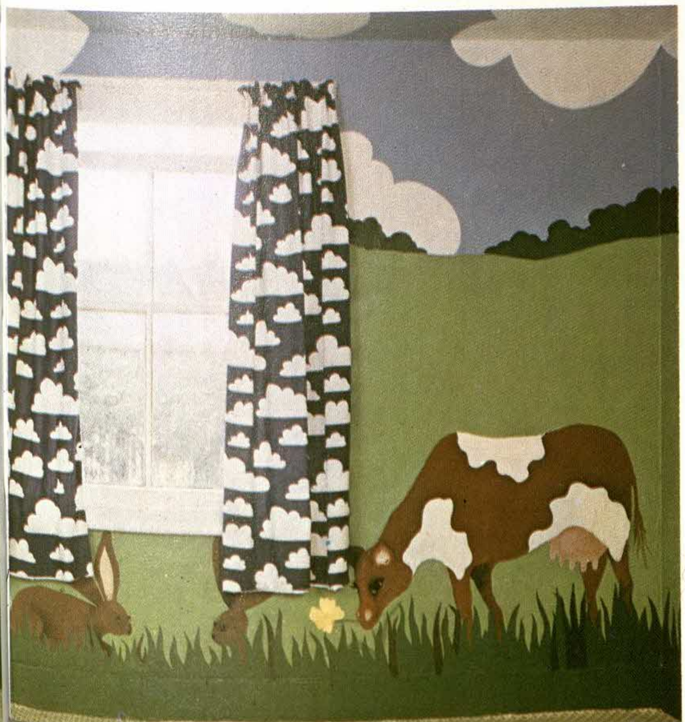
When the sky is dry, begin to paint the fields, again avoiding as far as possible painting over the sketches of the figures.

Tree trunks and animals can come next. Use artists' brushes for fine details.

Finally, using a darker shade of green, fill in the bushes on the horizon and proceed to paint the baseboard. When this is done, add the vertical grass blades freehand. The mural is now complete.

Right: cows, rabbits, cats and butterflies can all be traced and enlarged or you can try your skill in freehand and vary the animals and pets in the room to suit the tastes of its occupant.





Jerry Tubby

Completing loose covers

Cloth — sewing 19

In the last chapter instructions for cutting out a loose cover are given, and here the loose cover is stitched and completed.

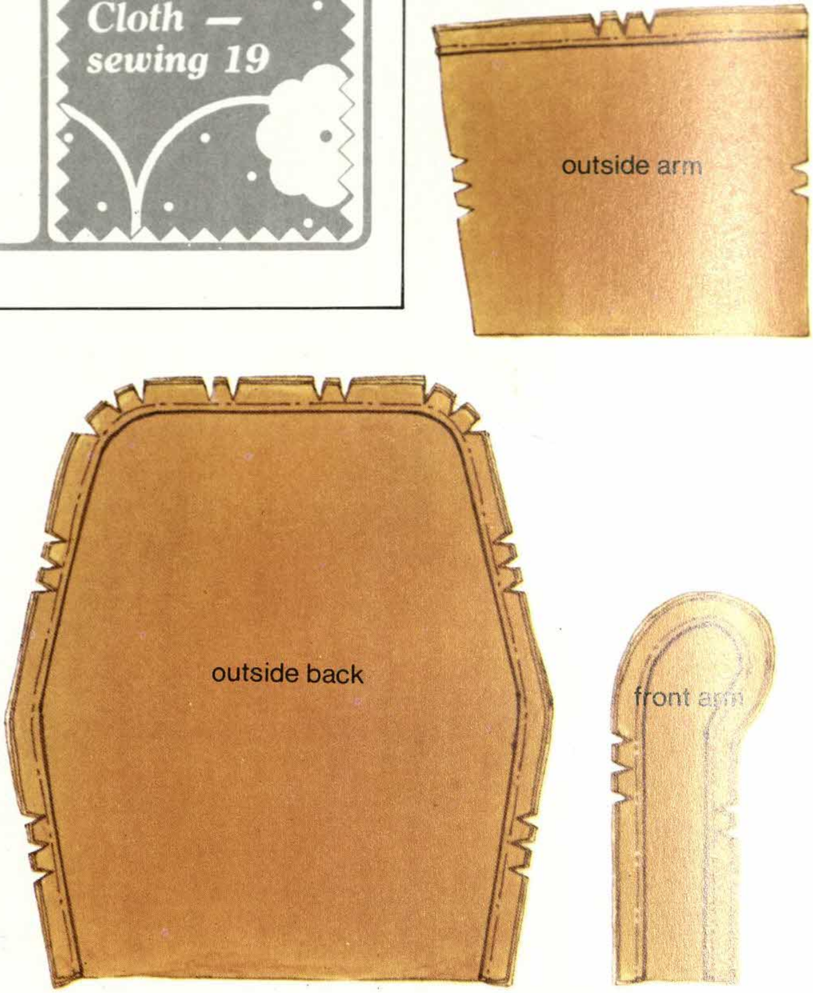
Piping

Piping will give a neat, well defined edge and at the same time strengthen the seams of covers to provide greater durability. First measure all edges of the chair which will be piped. Include the edges of cushions, and the base of the chair if it is to be piped as well.

Buy piping cord in one long length as joins in the cord are to be avoided.

Make up lengths of piping by enclosing the piping cord in the bias strips as described in Sewing chapter 6, page 402. Use Number 3 or 4 piping cord.

Attaching piping. Pin and tack the piping on the right side of the fabric sections shown (fig.1). Make sure raw edges are together. These include the top and sides of the outside back, the front arms and the top edges or 'sight line' of the outside arms. The front border will be cut and piped later.



1. *Piping tacked to the outside back, top of outside arm and front arm.*

Stitching and pressing

You are now ready to assemble the cover. You will find that a neat and crisp finish will be easier to achieve if you press seams as you work.

Remember to take 1.5cm ($\frac{1}{2}''$) turnings throughout and before stitching the sections together always pin and tack them first.

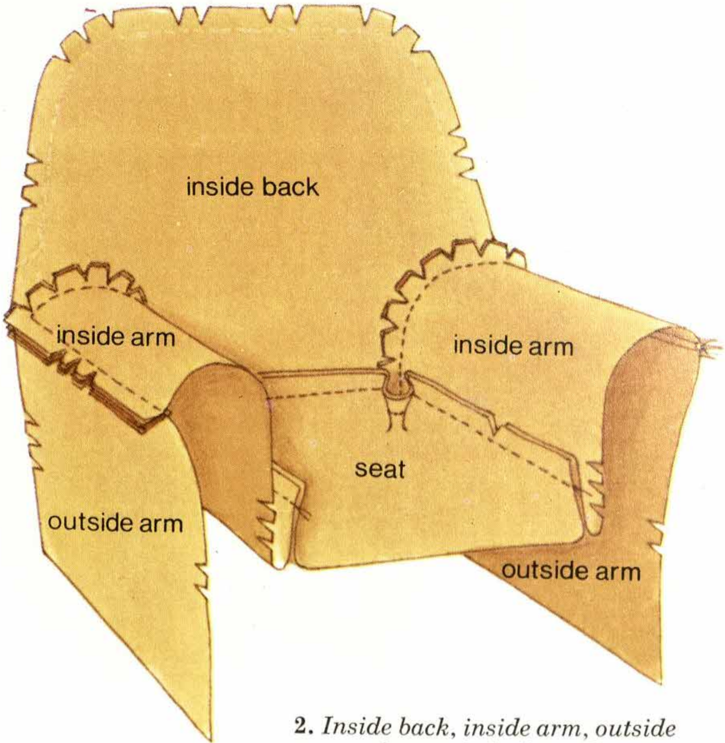
Stitch all seams with right sides facing and neaten the raw edges by stitching them together with a zig-zag stitch, or oversew by hand. Press all seams away from the front of the chair.

☐ First tack and stitch the tuck-in seam at the back of the seat and the bottom of the inside back. This is an unpiped seam.

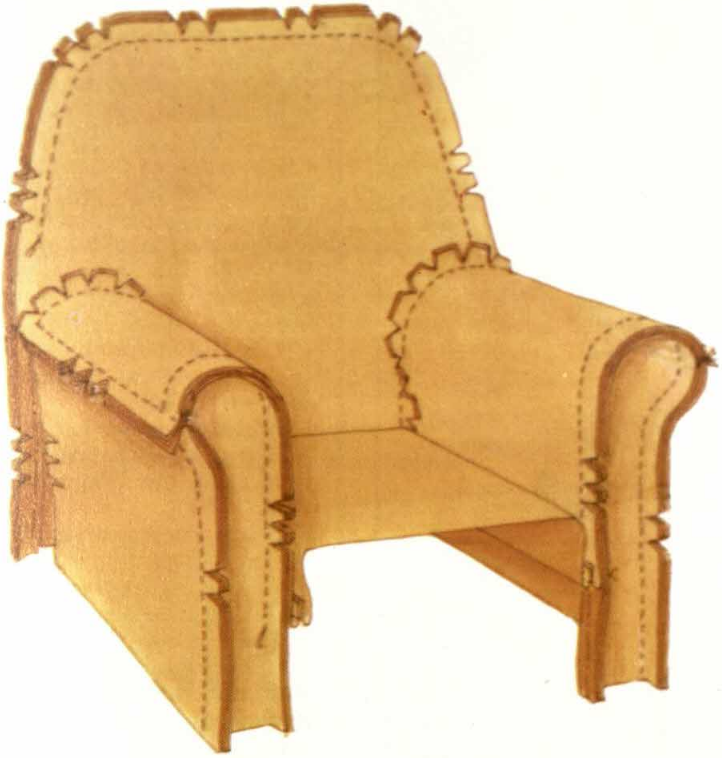
☐ Next stitch the outside arms to the inside arms stitching the piping into the seam.

☐ Stitch the bottom of the inside arms to the sides of the seat tuck-in, then stitch the arm to the inside back. (This seam is not piped.) Fig.2 shows seams stitched together thus far.

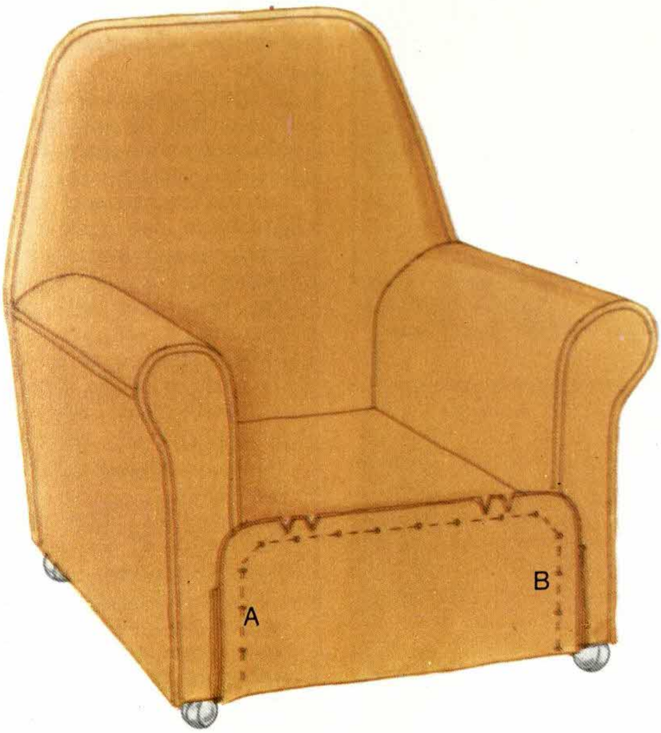
☐ Stitch the outside and inside back together along the top and down one side, then stitch the other side to about



2. *Inside back, inside arm, outside arm and seat stitched together.*



3. *Inside and outside back stitched together leaving an opening for zip or tape, and front arms stitched to outside and inside arms.*



4. *With loose cover on chair, pin front border to seat and arm fronts below tuck-in. Trim, reverse and stitch, piping the top edge.*

Paul Williams

10cm (4") above the top of the arm, leaving an opening so that the cover can be fitted on to the chair. The length of the opening depends on the shape of the chair as you must be able to slip the cover on easily. This is a piped seam.

☐ Stitch the front arm pieces in place. Stitch from the outside arm inwards and finish at the tuck-in on the inside arm (fig.3).

Fitting the front border

☐ Put the cover on to the chair right side out. Tuck in the sides and back tuck-in pieces, and leave the seam allowance protruding at the front edge. It is at this stage that you will be able to decide how long the back opening should be.

☐ Place the front border in position (fig.4). Pin it to the front of the seat cover and to the seam allowance of the tuck-in at both sides and to the lower front arms wrong sides facing. Trim the seam allowance to 1.5cm ($\frac{1}{2}$"), mark position with notches and remove the cover from the chair.

☐ Unpin the front border and insert piping along the seam line of the top edge from tuck-in to tuck-in (A to B in fig.4). Pin together, right sides facing. Tack and stitch the front border into position. The piping will run from A to B along the front of the seat and below A and B on the front arms.

Back opening

The opening down the back of the cover can be finished with a zip fastener, hooks and eyes or press studs —they are all equally suitable.

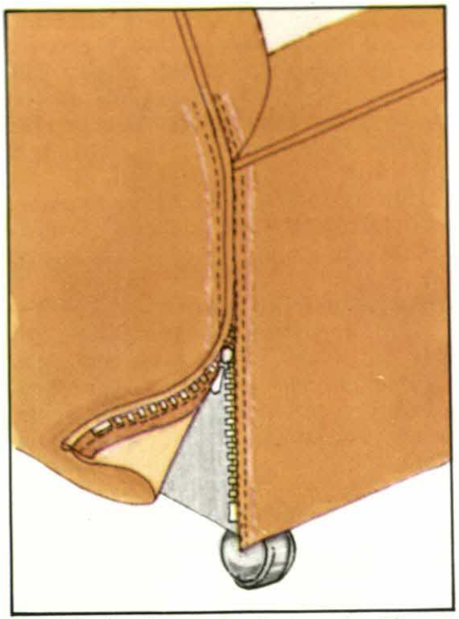
Strong upholstery zips are available and furnishing tape with large press studs or hooks and eyes already inserted can be bought by the metre (yard). If the chair or sofa has a very curved back, separate hooks sewn on by hand with hand worked bars will give a neater finish. It depends upon the finish at the bottom of the chair how long the zip or tape should be. Take the zip or tape to the planned bottom seam line.

Fitting a zip fastener. Measure the length required. The zip should not come to the bottom corner as the zip pull may protrude.

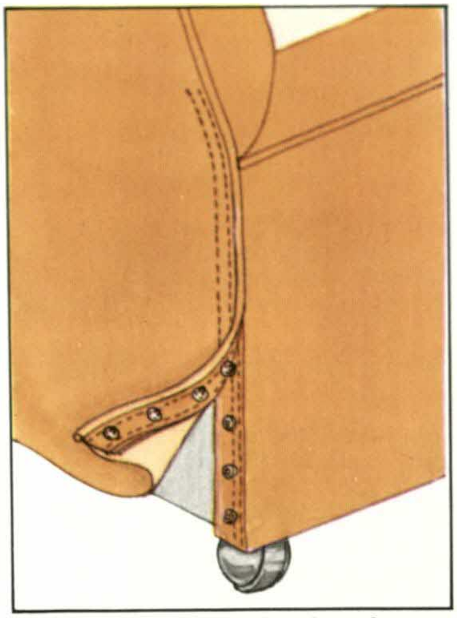
☐ Clip the front seam allowance at the top of the opening. Press the seam allowance on both edges to the wrong side and tack on the folds.

☐ Place the closed zip to the cover with the right side of the zip to the inside of the cover, and the open end down. From the right side tack the zip into place close to the teeth of the zip. The piping cord will be over the teeth.

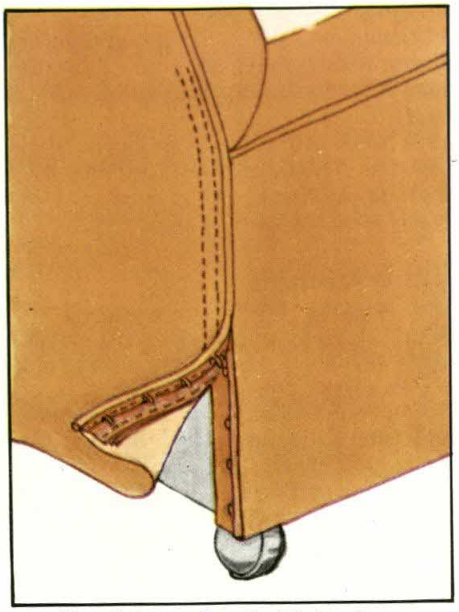
☐ Using a piping foot, machine stitch close to the teeth and again near the outside of the tape to add strength and



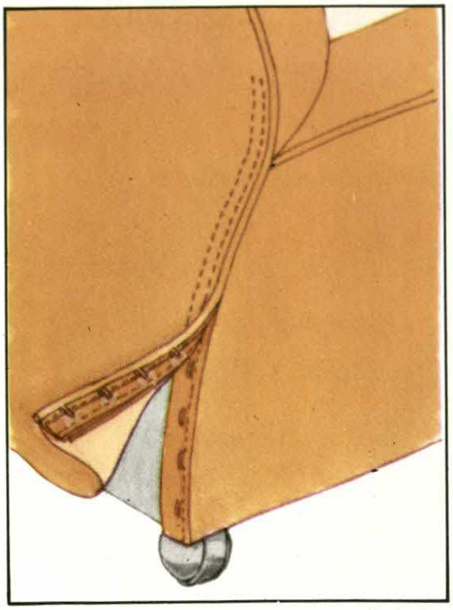
5a. *The back opening fastened with a furnishing zip.*



5b. *Tape already fitted with studs stitched into the opening.*



5c. *Special tape fitted with hooks and bars stitched into the opening.*



5d. *The opening on a very curved chair back with hand-sewn hooks and bars.*

prevent the zip tape from catching in the zip (fig.5a).

Tape with press studs or hooks. Clip the front seam allowance at the top of the opening.

☐ With the two pieces of tape fastened together, pin the tape into the opening making sure there is a stud or hook just above the bottom of the chair. One edge of each tape should be on the seam line. Now open the tape and tack and stitch each tape into position. The back tape is stitched on both sides flat against the back but the tape attached to the side bends round to the back of the chair. Stitch side tape close to the seam line. Work another row of stitching on the tape 5mm (¼") from the first (fig.5b and c).

☐ With the tape fastened neaten the top raw ends of the tape and stitch together.

Hooks and hand worked bars on plain tape. If the back of the cover is very curved it will be neater to use this method. The tape is attached to the cover in the same way as tape with hooks and eyes or studs. Hooks are then stitched on at about 5cm (2") intervals and bars worked by hand in strong thread to correspond with the hooks. On some curves it will be necessary to place the hooks and bars closer together so that the opening does not gape (fig.5d).

Box cushion. To cover a box cushion see Sewing chapter 7, page 430. Make both sides alike so that it is reversible.

Finishing the bottom

There are a number of ways to finish the bottom of a loose cover depending upon the style of the chair or sofa and your own personal taste.

A plain finish. This type of finish can be piped or left plain. It consists of strips of fabric fitted under the chair between the legs, with a narrow hem forming a channel (fig.6a).

If the bottom is to be piped attach the piping to the loose cover with raw edges together and tack into place before proceeding.

☐ Cut four strips of fabric about 10cm (4") wide and the correct length to fit between the legs.

☐ Make a narrow hem at the ends of each piece and a channel 1.5cm (½") wide along one long side to hold the tape.

☐ Stitch the raw edges of the strips to the bottom of the cover, sandwiching any piping in between. Neaten the raw edges and press up on to the cover.

☐ Insert a long piece of tape through the channel. Place the cover on the chair and tie the tape in one corner.

Frilled finish (fig.6b). Decide upon depth of frill required and add 1.5cm (½") for seam allowances at the top and 2.5cm (1") for a small hem.

☐ Measure around the bottom of the chair and double this measurement. This will be the length of frill required.

☐ Cut fabric into strips the required depth and join the strips to obtain the right length taking 1.5cm (½") turnings. Clip the selvedges and press the seam open.

☐ Make a small hem along the bottom of the frill by turning up 2.5cm (1"). Make a small hem on the short ends for the opening in the same way, mitring the corners.

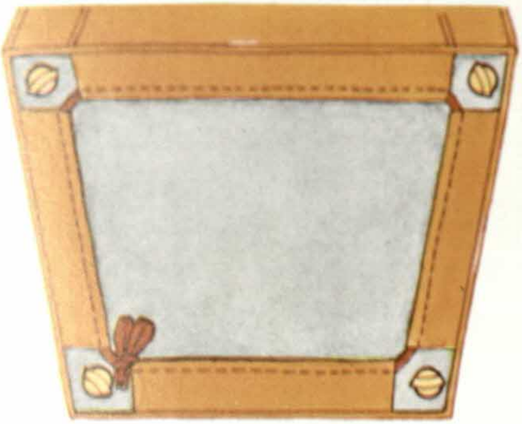
☐ Divide the frill into four equal sections and mark with pins. Run a gathering thread between the pins. The open end will go to the back opening.

☐ With the cover on the chair mark the position of the stitching line for the frill with pins, measuring from the floor. Trim the cover to 1.5cm (½") below the pins and pipe the bottom of the cover.

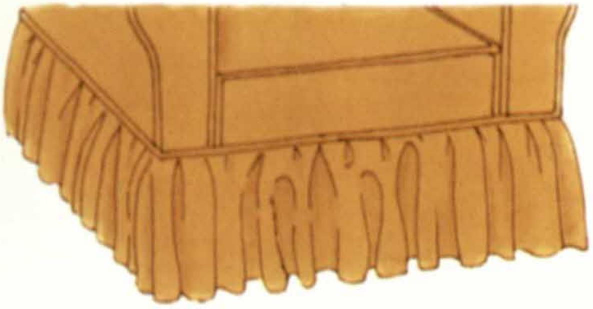
☐ Divide the measurement around the piped edge of the cover by four and mark with pins.

☐ Take the cover off the chair. Draw up the gathers on the frill and with right sides and raw edges together, matching the pins, pin and tack the frill to the cover, distributing the gathers evenly. Stitch and press up, neaten the raw edges together.

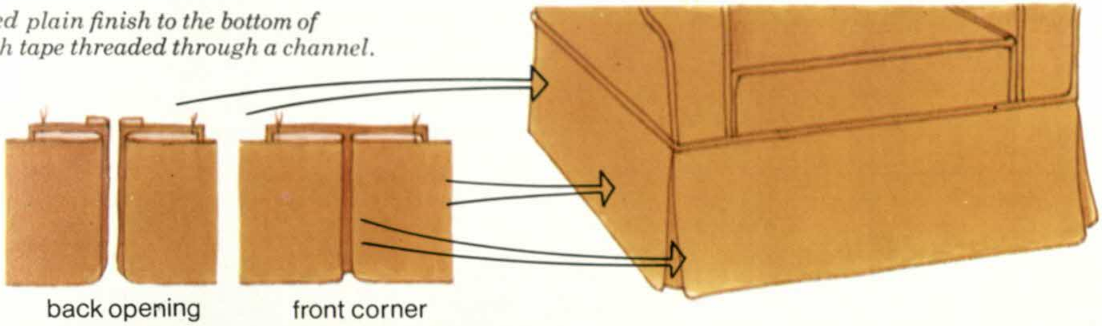
Plain tailored finish. To make skirting for a plain tailored finish, a border of fabric is placed around the chair or



6a. *A piped plain finish to the bottom of chair, with tape threaded through a channel.*



6b. *Frilled finish—tapes can be sewn to the inside corners of the cover and tied around the legs.*



6c. *A plain tailored finish with box pleats. On one back corner the pleat is open to extend the back opening.*

sofa with a pleat at each corner (fig.6c). Measure the bottom front, back and sides of the chair or sofa, and add 11cm (4″) to each measurement.

☐ Cut strips of fabric to these lengths and to the depth of border required plus seam and hem allowance; mark each piece. Cut three strips 11cm (4″) by the depth of the border and two strips 6.5cm (2½″) by the depth of the border. These are for the corners.

☐ With the cover on the chair mark the depth of border required with pins and trim the cover to 1.5cm (½″) below the pin line. Pipe the edge all around the bottom of the cover.

☐ Join the border pieces together placing a short piece to each corner and the two very short pieces to the back opening. Take 1.5cm (½″) turnings. Clip the seam allowance and press open.

☐ Make a small hem along the bottom and turn in 1.5cm (½″) at the ends. Neaten and press.

☐ From the right side make a 4cm (1½″) inverted pleat at each corner and tack. The seams will sit inside each pleat.

☐ Tack and stitch the border to the cover with right sides together, sandwiching the piping, neaten and press up.

Courtesy of Sanderson

A William Morris design printed on linen is used to cover this chair. The cover is washable, therefore practical.

Silver soldering sheet metal

Silver soldering is a form of hard soldering used on small items such as jewelry. The technique is not only used on silver, it is suitable for other metals as well (see chart). It is an alternative to brazing and strong joints are easily achieved.

Hard solder and flux selection guide

Metal to be joined	Solder	Flux
Brass or copper	Silver solder	Borax
Tin, zinc or lead	Not possible	—
Gold or silver	Gold solder Silver solder	Boric acid
Nickel	Silver solder	Special flux
Iron or steel	Brazing solder Silver solder	Borax
Cast iron	Brazing solder	Cuprous oxide

Equipment

If you have been using a blowtorch you will not need any additional equipment and you do not need a special working area either. Remember to take the usual precautions: work on an asbestos mat placed on a heat resistant surface such as fire bricks; turn down the blowtorch flame when you are not actually soldering and point the flame away from yourself.

Materials

Whether you are soft soldering, brazing or silver soldering, apart from a heat source you will need some form of solder and flux. The solder and the flux will differ according to the temperatures being worked at and the metals being used.

Silver solder is an alloy of copper, zinc and silver and, sometimes, cadmium. It is available in three types: easy, medium and hard—the latter contains the most silver and consequently has the highest melting point (the more silver in the solder the more expensive it is).

Flux. Borax is used as a flux and sometimes boric acid (see chart). Several proprietary fluxes can be obtained for the different solders but they are not essential as borax is suitable for most purposes.

Preparation

The same preparations must be made for silver soldering as for previous soldering techniques.

The metal around the joint must be cleaned with a file or an abrasive paper.

The flux must be applied on to the parts that are to be joined.

For good results try to hold or grip the metal firmly together in some manner during the soldering process.

Technique

Silver solder is often cut into very small pieces and placed along the joint before heating as opposed to adding it to the joint when the metal is hot as described in previous chapters. (Apply the flux before placing the bits of solder in position.) This avoids wasting expensive solder and also reduces the amount of excess solder to be cleaned later.

The flame must be used gently at first so that the pieces of solder are not blown off. After a short while the solder will adhere to the heated flux and the flame can then be increased. The silver solder melts and flows easily, the whole operation takes no time at all so there is no stopping half-way through. If you work carefully and follow the above instructions there is little that can go wrong except with the amount of solder used and that is easy to estimate once you have done a practice joint or two. (If you use too much solder it can be filed away.)

Multiple soldering. It is quite usual for several silver solders of different hardnesses (or melting points) to be used on one piece of work where several joins are being made. This becomes necessary if a piece of metal is

Copper tea caddy with a cork lid. Designer Graham Hiles.

Jerry Tubby

being soldered near to a previously soldered joint as the solder used for the new joint should have a lower melting point than that used in the other joint. This will prevent the first joint from melting when the new joint is heated. In other words a hard solder is used for the first joint, a medium solder is used next and then an easy solder, so that the preceding joints do not fall apart when re-heated. This is particularly useful when several pieces of metal have to be joined in close proximity.

Copper container

The container overleaf is 10.5cm (4¼″) in diameter and is 14cm (5½″) high. A lid can be made to fit over the top or you can use a cork lid, or cut one from a piece of wood. The inside of the container is varnished to seal the metal. This prevents the copper from oxidizing.

The container can be used as a tea caddy. The size can be varied to suit your own requirements. Copper is readily available and inexpensive and making the container will give you some experience in silver soldering. By the time you have finished it, you should be able to make a reasonably neat joint. Also the same technique is used when working with silver so this is a good foundation before embarking on more ambitious and expensive items in silver.

You will need:

Copper sheet .9mm (gauge 19-20)—a fraction either way is immaterial. To make the size indicated you will need a piece of copper 30.5cm x 46cm (12″x 18″). This is sufficient for a lid as well as the container.
Binding wire—thin galvanized wire or any wire, such as brass picture hanging wire, will do.
Strips of waste wood.
Piece of pipe—around which to shape the cylinder.
Metal file and tin snips (metal shears).
Hammer or wooden mallet, and pliers.
Wet and dry emery paper—medium and fine.
Fine steel wool and metal polish.
Blowtorch.
Silver solder—medium and easy.
Flux—borax.

☐ Cut the copper to the width required—14cm (5½″) in this case—and the length about three times the required diameter—31.5cm (12¾″). (The smaller the container the easier it is to make.)

Annealing is a process used to soften metal. The metal is heated and then plunged into cold water making the metal soft and malleable.

☐ To anneal the copper, heat it with the blowtorch until the metal is a dull red. Pick up the copper with a pair of pliers and immediately plunge the copper into cold water. This will make the copper soft enough to be bent with the fingers.

☐ Shape the copper roughly to a cylinder so that the edges butt.

☐ Flatten along the joint faces by placing the copper between the pieces of waste wood and using a hammer or mallet (fig.1).

☐ Run the joint faces along the file (fig.2). It will be easier if you clamp the file in a vice or with a G-clamp.

☐ Butt the edges together again and repeat the process of flattening and filing until the joint is as perfect as you can make it.

☐ Make a small loop in a piece of wire and tie the wire round the cylinder twisting the ends together. Push a pencil through the loop and turn it to tighten the wire around the copper so that the edges meet. Twist the wire until it pulls the copper tight along the joint (fig.3). Do not worry too much about how circular the cylinder is as long as the joint fits neatly.

☐ Mix borax with a little water and apply it to the joint along the inside.

☐ Place small pieces of medium solder along the joint and heat until it flows. Leave the copper to cool.

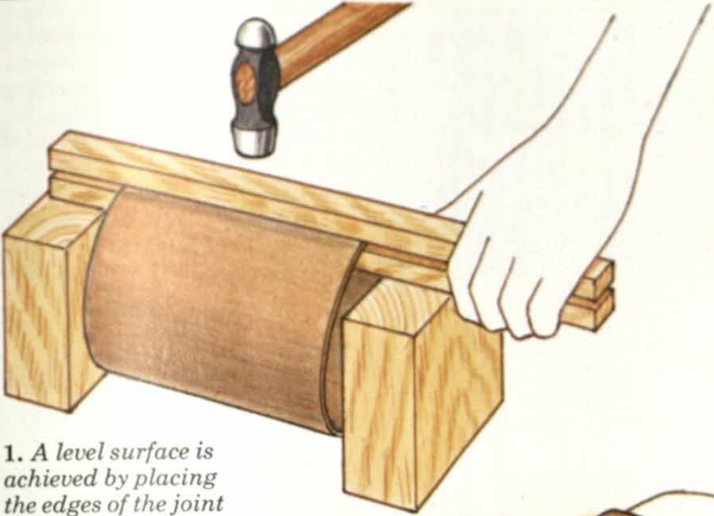
☐ The cylinder can now be made more circular by placing it over a suitable cylindrical 'former'. This can be a piece of thick dowel or a length of metal pipe (fig.4). If the copper is trapped between the pipe and a hammer or mallet it will stretch just in that area. By gradually working along the cylinder and rotating it so that every part has been worked, this local stretching will form a perfect cylinder.

☐ The bottom end of the cylinder must be made perfectly flat. To do this rub the bottom on a piece of medium wet and dry emery paper placed on a flat surface.

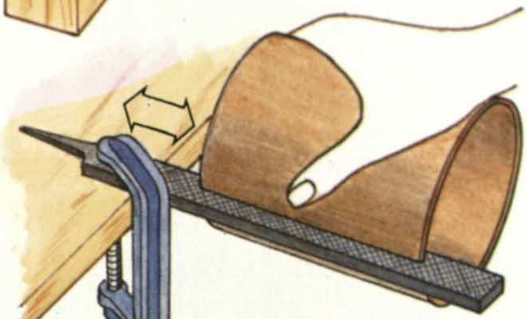
☐ Cut a rough circle for the base of the container—at least 6mm (¼″) larger

Use tin snips in order to cut the sheet to the required size. The outline of the container can be marked on the copper with a felt-tipped pen before you start cutting.

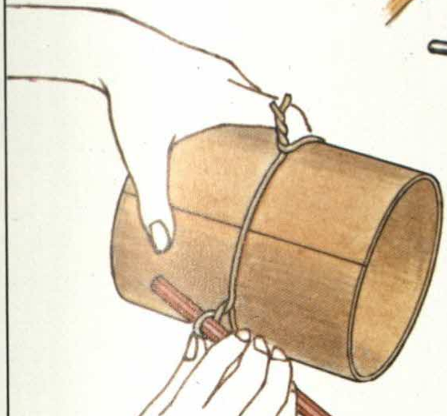
Melvin Grey



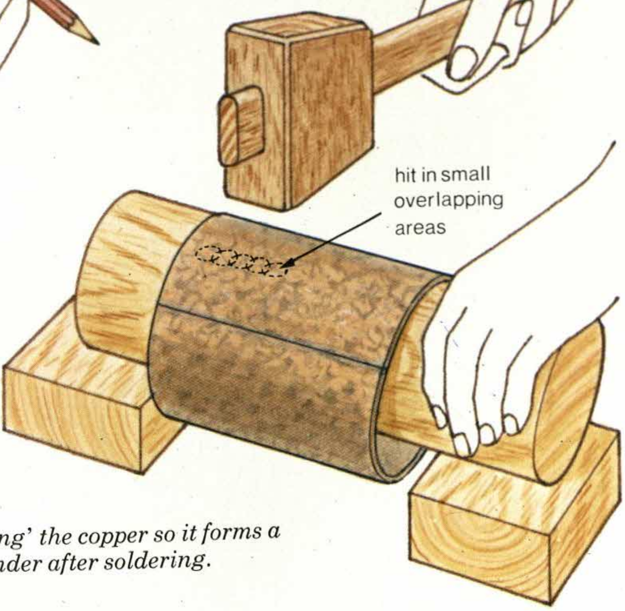
1. *A level surface is achieved by placing the edges of the joint faces between two pieces of scrap wood. The wood also serves to protect the copper when you use a hammer.*



2. *Smoothing the edges of the joint faces with a metal file held firmly in a clamp.*



3. *Using a wire loop to hold the cylinder securely in shape before soldering.*



4. *'Stretching' the copper so it forms a perfect cylinder after soldering.*

Paul Williams

all round than the bottom of the cylinder.

☐ If the joint between the base and the cylinder is not a perfect fit, soften (anneal) the base as described previously and flatten it between two pieces of wood.

☐ Stand the cylinder on the base and flux the joint.

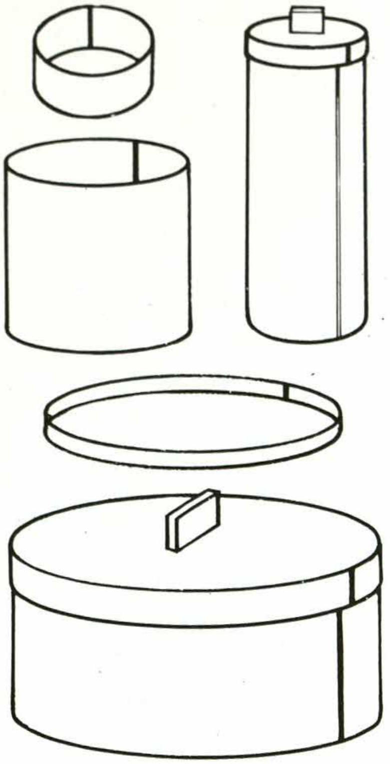
☐ Add pieces of solder (easy) to the outside of the joint and heat until the solder flows. Leave to cool.

☐ Cut off surplus metal around the base with tin snips or shears. File down to exact size of the cylinder.

☐ Clean the copper with medium and then with fine wet and dry paper. Finish with fine steel wool and metal polish.

A lid can be made for the container. A circle of wood can be cut or a cork top is also suitable.

A copper lid can be made by repeating the previous soldering process, in which case the ring which forms the sides of the lid must be made slightly larger to fit around the container. The base (now the top) is put on as before. The copper surface can be textured by using an engraving tool, a punch, or a hammer. Alternatively the hammered effect made while shaping the cylinder can be accentuated to form a decoration. If a perfectly plain surface is required special care must be taken to form a perfect cylinder before soldering.



Various cylindrical shapes with copper lids. The handles on the lids are secured with solder.

Trevor Lawrence

Bottle gardens

Flowers and plants 9

Bottle gardens are virtually self-contained worlds needing little attention once they are planted and in the case of air-tight versions, called terrariums, they are entirely self-perpetuating. This is because moisture collects on the interior walls of the bottle and 'rains' on the miniature garden below. Also the life cycle continues unimpeded since plants both make and use oxygen and carbon dioxide.

Many delicate plants normally difficult to grow in homes flourish particularly well in bottle gardens because they are protected from draughts and, if moist enough, enjoy perfect greenhouse conditions.

Bottles

A sizeable glass container is required for a bottle garden, preferably one with a glass lid or sides that curve over the garden so that condensed moisture can collect and water the plants. The glass can be slightly tinted but it must be borne in mind that tinted glass reduces the penetration of light. In some exposed conditions, however, this may be desirable.

Large wine jars or demijohns, and bulbous carboys used for storing acid and chemicals are particularly suitable. Another possibility is to turn a large jar on its side so that one side becomes 'earth' and the opposite is 'sky'.

One of the attractions of bottle gardens—as with ships in bottles—is their improbable appearance and the

narrower the neck the more effective is the result in this respect. However, the neck of any bottle destined to become a garden must be wide enough to get small plants through and also provide enough room to manipulate the tools with which the garden is planted.

Tools

Tools must be improvised.

Old forks and teaspoons make useful rakes and trowels when lashed to a slender stick or piece of dowelling. If they are in throw-away condition a dab of glue to bind the implement to the stick is advisable before lashing the two together.

A cotton reel with a dowel stuck firmly through the centre hole, makes a useful rammer for packing down soil.

Maintenance tools if required can consist of a razor blade glued to a stick for pruning, and 'chopsticks' made of two extra-long sticks for collecting bits and pieces.

Suitable plants for bottle gardens

- **Asplenium nidus**
- **Begonia**
- **Cryptanthus**
- **Chlorophytum**
- **Fittonia**
- **Ficus pumila**
- **Hedera** (Ivy)
- **Kalanchoe**
- **Maranta** (arrowroot)
- **Peperomia**
- **Pilea**
- **Pellaea** (cliff-brake)
- **Sanseveria** (snake plant or leopard lily)
- **Spathiphyllum**

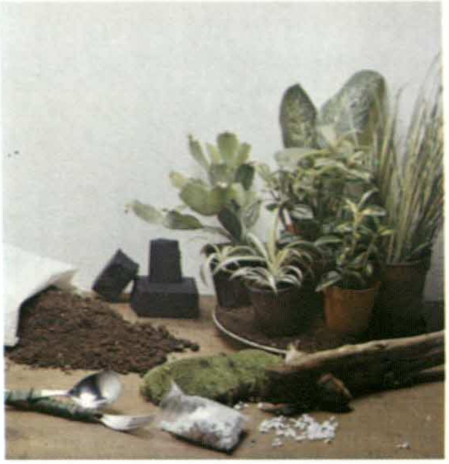
Planting a garden

Clean the bottle well with detergent and water and line the bottom of the container with pebbles or bits of crockery for drainage.

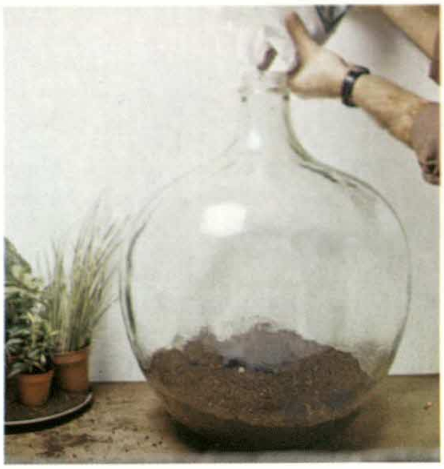
Compost is then added. This should be a sterilized form of potting compost

Part of the enjoyment of creating bottle gardens is 'landscaping', since each garden must suit the size and shape of its container. Gardens shown are by Selwyn Davidson.

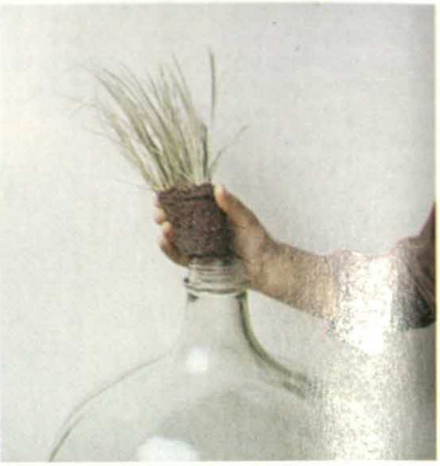
David Levin



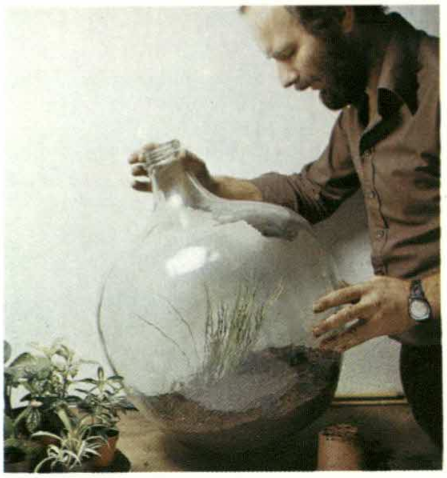
1. *'Landscape' your garden on a plate before beginning to plant it.*



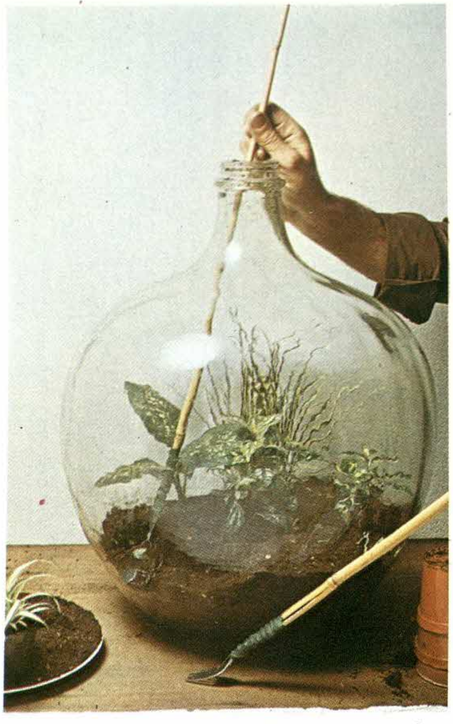
2. *Pour in compost over drainage pebbles.*



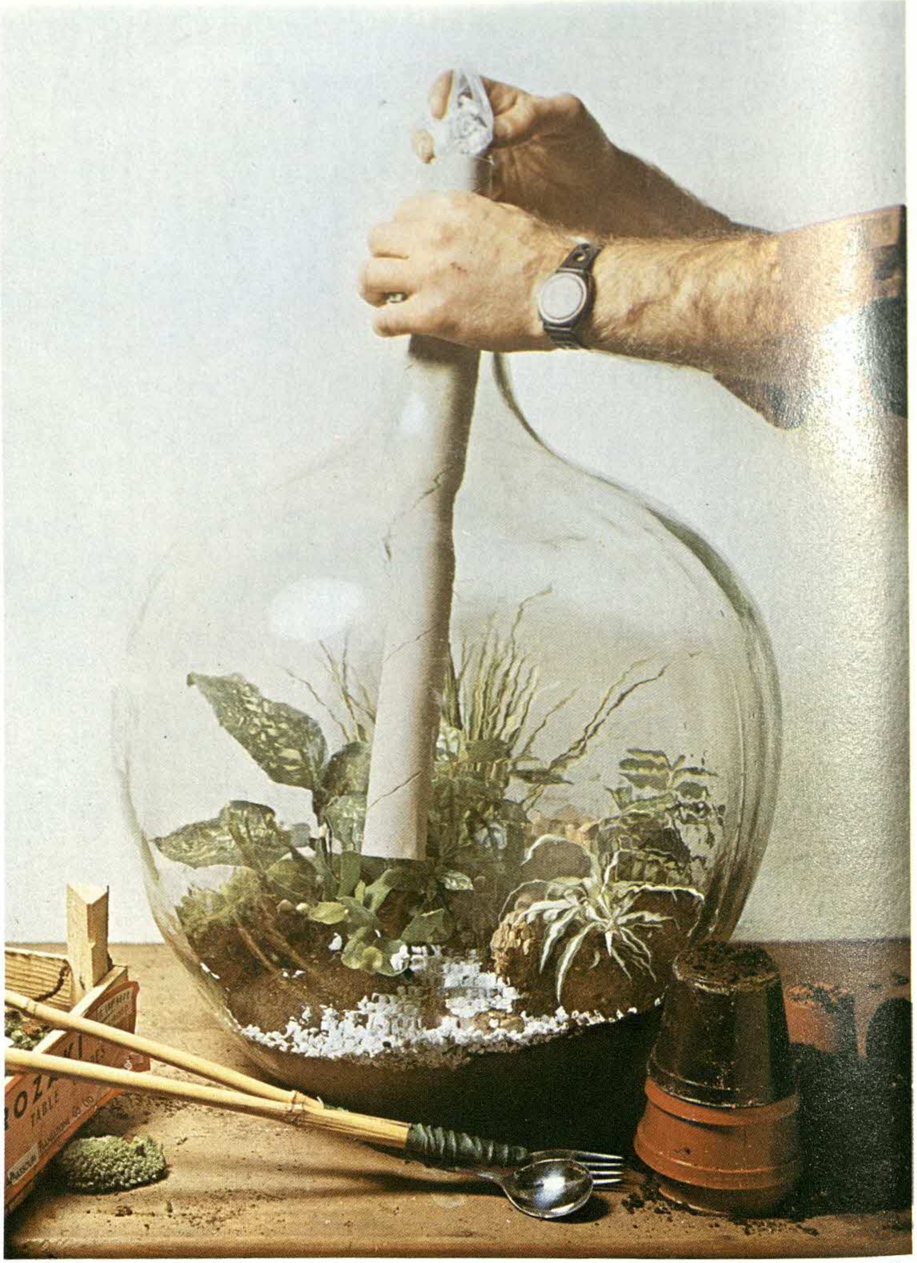
3. *Push each tiny plant gently through the neck of the bottle.*



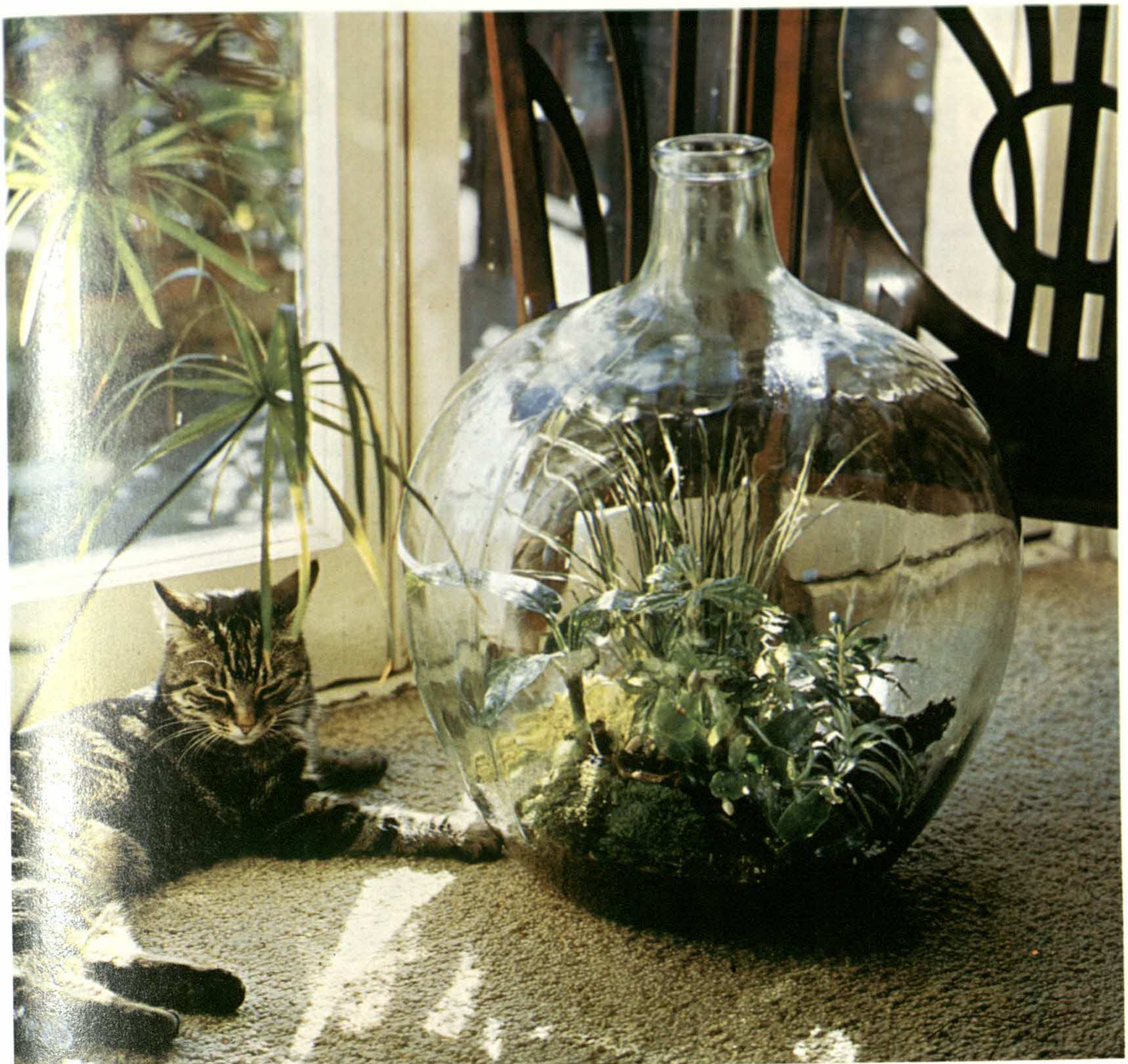
4. *By tilting the bottle plants can be dropped more easily into place.*



5. *Use improvised tools to manipulate plants and arrange compost in the bottle.*



6. *Final decorations such as pebbles can be added using a 'funnel' to complete the garden. Designed by Selwyn Davidson.*



David Levin

such as John Innes compost. A funnel can be used to protect the glass sides of the container from becoming soiled. Arrange the compost to suit your planting scheme using the fork or spoon to make any undulations and the rammer to pack the soil.

Arranging the plants. Because of the difficulties of re-arranging plants in the bottle it is advisable to lay out the garden first on a dish or platter. The chart on page 1593 gives a list of recommended plants for bottle gardens. When a suitable arrangement has been made plants can be transferred one at a time into position in the bottle.

Planting. Use the trowel to make a little hole for the plant. Put in the plant and fill in the hole round it by jiggling soil about with the trowel. If you are not very successful at this do not worry—the plants will root themselves when they have been watered. Sometimes the bottle can be tipped to facilitate dropping the plant into a corner. On other occasions the long-handled implements can be used as 'chopsticks' to manipulate plants.

It is better to start planting from the outside of the bottle, and work inwards towards the centre. Do not press the plants against the sides of the container although it is permissible to allow some of the leaves to touch the sides.

Ornaments. Both natural ornaments and artifacts can be added for texture and decoration: moss, bark, rocks, toadstools, even a snail will flourish in this moist clime. Alternatively, a miniature bridge or house in keeping with the overall scale could be included.

The finished garden is a world of its own, requiring little attention and providing hothouse growing conditions.

Clean the sides of the container if necessary with a piece of plastic sponge which has been tied to a long wire made from a straightened out coat-hanger.

Watering can be accomplished with a small spray. If the bottle is then corked it will cloud up, but only temporarily.

Bottle gardens never need watering as often as ordinary house plants and if the bottle is corked then you may not have to add any water for months. It is advisable, however, to watch the garden fairly closely at first to make sure it does not dry up and to give it time to establish itself as a microcosm or world of its own.

The italic hand

Design know-how 57

The most rapid of the formal hands used by scribes, and the one most clearly related to our modern handwriting, is known as the italic hand. Italics closely resemble the formal round hand, but are narrower, slightly sloped to the right, and more freely written. The letters have great elegance and charm, and because of their compactness, occupy much less space than the round, or foundation, hand shown in the previous chapter.

Italics must be written with ease, but also with great regularity, with a slanted pen held at a constant angle. You will need a set of round hand, straight cut, steel nibs for writing this hand. Follow directions in the previous chapter to prepare materials for use.

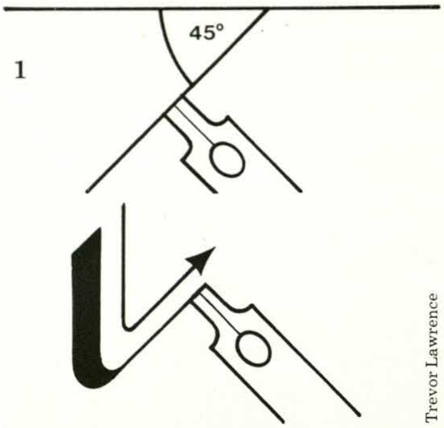
Do not practise with too fine a nib because your letters may become inaccurate and too 'pretty'.

Hold the nib at an angle of 45° from the horizontal (fig.1).

Follow the same directions of stroke for the italic alphabet as for the foundation hand and start to draw the letters (fig.2).

Practise drawing serifs. If they are made too clumsily they will look ugly and ruin a piece of writing. Do not attempt elaborate flourishes or fine hair strokes too soon. Keep your letters simple, and with practice you will acquire an italic hand of real character.

1

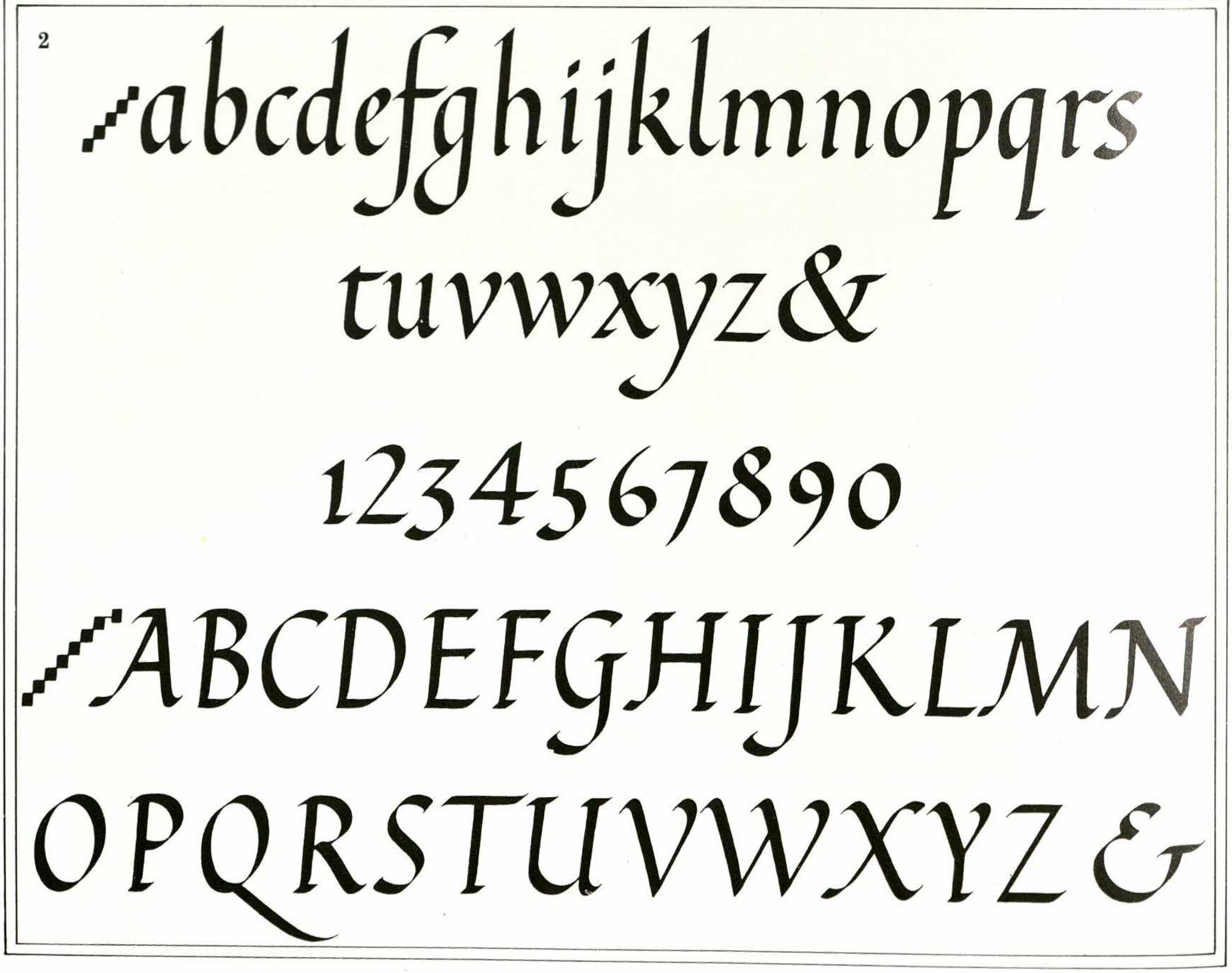


Trevor Lawrence

1. *The italic hand is written with the nib held at an angle of 45° to make the thick and thin strokes.*

2. *Copy this example of the italic hand. Make the height of the small letters equal to five times the width of the nib, and the height of the capital letters equal to seven and a half times the width of the nib.*

2



Dryad Press

Creative ideas 57

Puzzle panel

This sophisticated puzzle is a good way to practise your woodworking skills. You must cut the wood accurately so that the lines are straight—if you do not, the sanding required to smooth the edges could alter the finished shape and the pieces will no longer fit.

You will need:

Parana pine 25mm (1″) thick and 46cm x 30.5cm (18″x 12″).

Tenon saw and G-clamp.

Fine glasspaper.

Ruler and hard pencil.

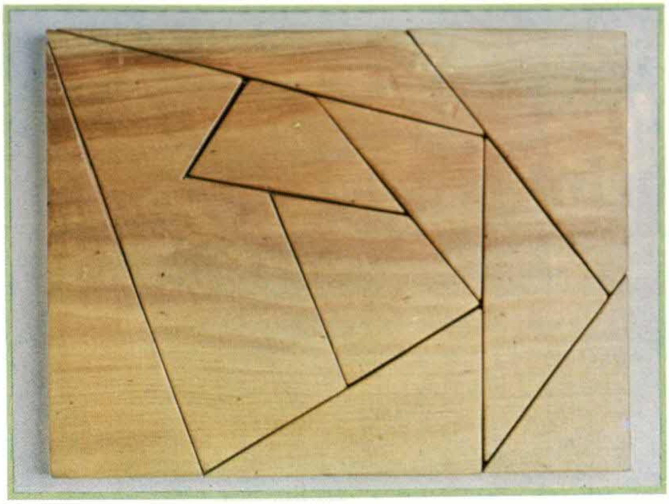
Matt polyurethane varnish.

Give the wood a preliminary rub down with glasspaper, sanding with the grain of the wood.

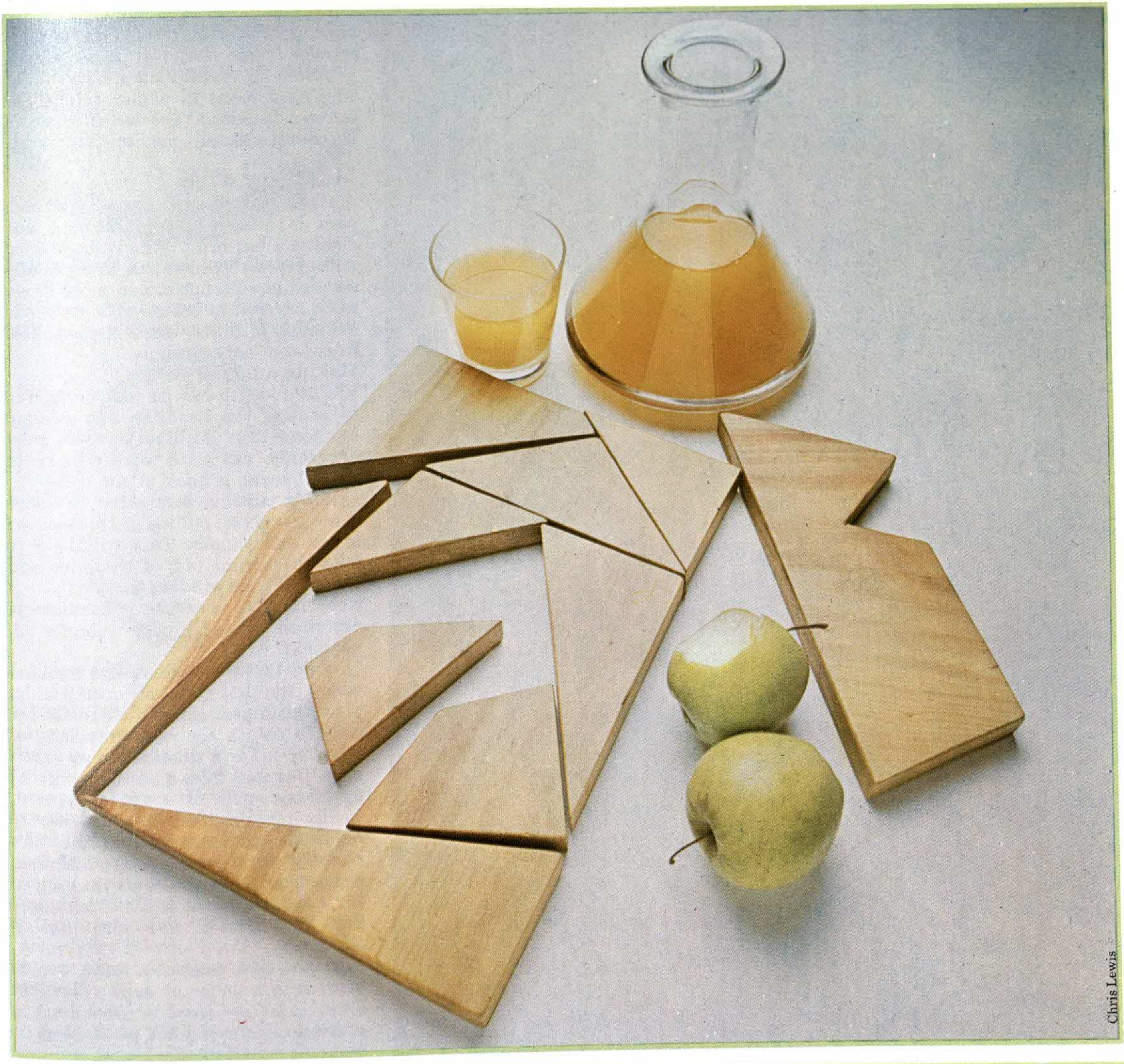
Now draw an abstract puzzle shape directly on to the wood with ruler and pencil—it might be helpful to work out the design on paper first.

Clamp the wood to the work table and cut out the pieces. When finished, smooth all rough edges and flat surfaces.

Apply an even coat of polyurethane varnish over each piece and leave to dry in a dust-free place.



Puzzle panel designed by Roger Polley—an ideal gift.



Chris Lewis

Hat with stitched brim

Cloth — millinery 5

Anyone who enjoys making clothes will find that making a hat with a stitched brim is quite straightforward. The hat with the small brim shown here is made up in fine wool and interfaced with a stiffened cotton fabric. In Millinery chapter 1, page 576, and Millinery chapter 3, page 624, other fabrics and interfacings are suggested which would also be suitable for hats with stitched brims, and in Millinery chapter 6, instructions are given on how to make your own paper pattern for a brim to any width required.

A millinery block

When you have made several hats successfully, it may be worthwhile investing in a hat block, for although a block is not an essential piece of equipment for simple hats, it is helpful when you progress to more specialized millinery. The block can be a plain wooden dome shape on a stand and available in various sizes, or a modelling head made in papier mâché and covered in fabric. The latter comes in three sizes: small, medium and large.

Millinery wire

A separate, firm support called a headwire is necessary for checking and making a hat brim. This is made from millinery wire which was traditionally covered in silk, but is now more likely to be covered in cotton or a synthetic material. Millinery wire is obtainable from large haberdashers.

Making a headwire

☐ Cut a length of wire long enough to fit around the headline and overlap by 5cm (2″). Millinery wire must always be cut with wire cutters to avoid leaving a hook at the end.

☐ After cutting, straighten the wire if necessary, by pulling it between the finger and thumb. This will help to take the spring out of the wire and prevent it from winding back.

Note: how to measure a headline is described in Millinery chapter 3, page 624.

☐ Hold the wire around the headline where the hat will fit comfortably, place the fingers of one hand inside the wire to obtain the necessary ease of 1.5cm ($\frac{5}{8}''$). For a thick tweed or velvet brim however 2cm ($\frac{3}{4}''$) ease will be necessary.

☐ Having established the overlap required, bind the join in the wire securely with double cotton thread, starting at the centre and working to each end and back again. Make sure that the ends of the wire are all

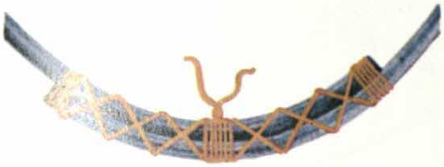
This hat with a stitched brim can be worn in a number of ways. Turn the brim up at the front or back and, if possible, steam the hat on a block to make the most flattering shape.

Sandra Lousada

Jerry Tubby

Two millinery blocks: on the left of the picture a modelling head in papier mâché covered in fabric, and on the right a wooden dome block on a stand.

covered and tie threads off securely (fig.1).



1. *Join headwire ends with thread.*

☐ Shape the headwire into an oval with the join at the centre back (fig.2).

Coral Mula

2. *Shape headwire into an oval.*

Graph pattern

You will need:
Graph paper and pencil.
This graph pattern is for hats with a three piece crown, the seams run from front to back and the brim is 5.5cm (2¼") wide at the centre back.

☐ Using graph paper, draw the pattern to scale. Mark all notches, the straight grain line and the centre front of the brim, 1.5cm (⅝") turnings have been allowed throughout. Cut out the pattern after adjusting the size to suit yourself.

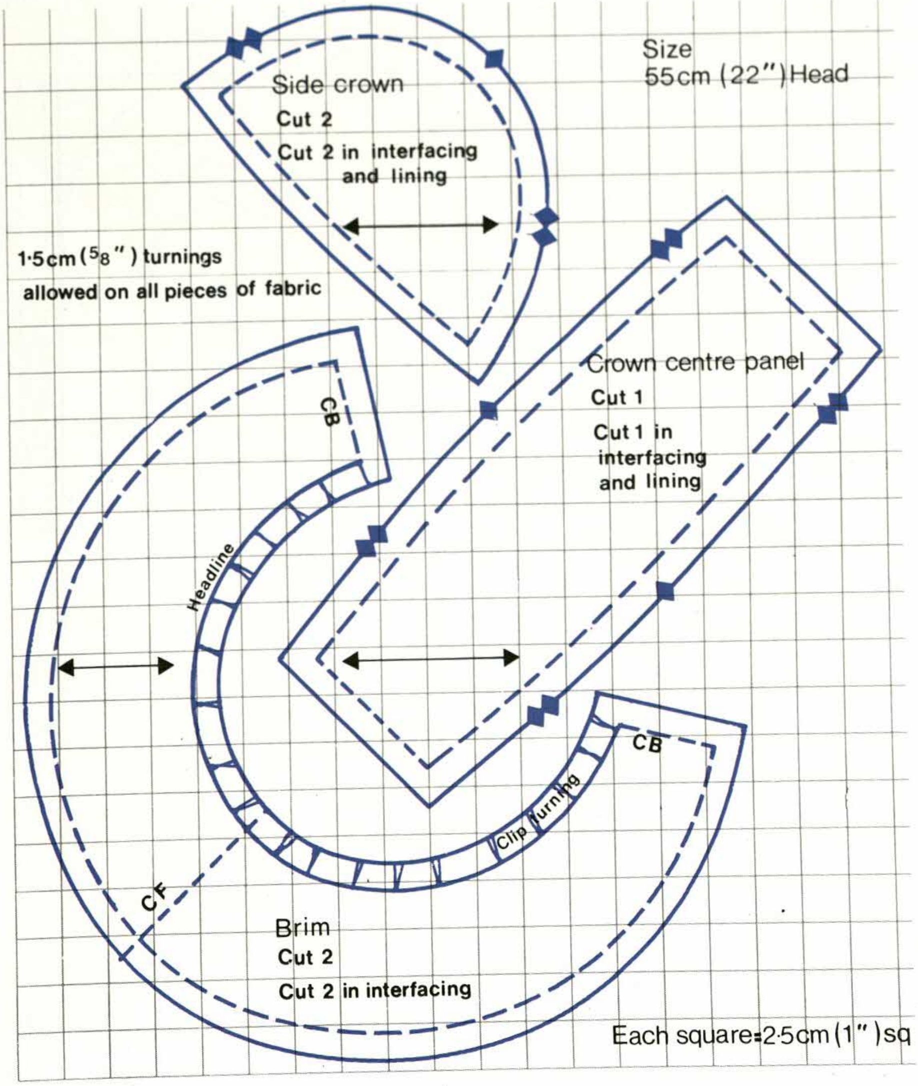
Cloche hat

The pattern is for a size 55cm (22") head but can be adjusted to any size.

You will need:
50cm (⅝yd) of 114cm or 137cm (45" or 54") wide light-weight woollen fabric.
70cm (¾yd) of 90cm (36") wide cotton interfacing.
2 reels of matching or contrasting thread such as Sylko No.40.
70cm (¾yd) toning millinery petersham ribbon 2cm-2.5cm (¾"-1") wide.
A hat block (optional).
Iron.
Large drawing pins and pencil.
Straw needle No.6.
50cm (½yd) toning taffeta lining.
Headwire made up to the required size.

Trial shape

A trial hat is made up in interfacing and paper so that adjustments can be made before cutting out the hat in fabric. Specific instructions are given below for making a trial version of the hat featured here—but brims of any width can be created using information in the special section on making paper brim patterns (Millinery chapter 6).


Side crown
Cut 2
Cut 2 in interfacing and lining
Size
55cm (22") Head
1·5cm (5/8") turnings allowed on all pieces of fabric
Crown centre panel
Cut 1
Cut 1 in interfacing and lining
CB
Headline
CB
Clip turning
CF
Brim
Cut 2
Cut 2 in interfacing
Each square=2·5cm (1") sq

Trevor Lawrence

Graph pattern for hat with two seams running from front to back on crown.

To make a trial shape

☐ Place pattern on to single interfacing making sure the grain line on the pattern is on the straight grain of the fabric. Pin into place and cut out. Mark all notches accurately on the crown.

☐ Taking 1.5cm ($\frac{5}{8}$") turnings, tack the crown together matching the notches accurately for a smooth curve (fig.3).

☐ Cut out the trial brim pattern using double newspaper. Taking a 1.5cm ($\frac{5}{8}$") turning, pin the centre back seam. Clip to the headline and attach the headwire along the headline of the brim with pins. Trim off the seam allowance around the outside edge so that the finished brim width can be seen.

☐ Turn under the interfacing crown seam allowance and pin the crown over the paper brim headline (fig.4).

☐ Try on the trial shape and check it carefully in the mirror. If the crown looks too high the headline turning can be made deeper. The brim width may be reduced if necessary by simply trimming the paper edge with scissors.

☐ With pencil mark the stitching line and any alterations on the trial shape carefully then take the pieces apart.

☐ Press the crown interfacing and if the brim pattern has been altered fold it in half to check that it is still symmetrical.

Cutting out the woollen fabric

☐ Lay the interfacing crown pieces and the newspaper brim pattern on the wrong side of the single woollen fabric and according to the cutting layout (fig.5). Pin into place, check the grain line, and remember to add the 1.5cm ($\frac{5}{8}$") seam allowance to the outside edge of brim which was cut off the trial pattern. Cut out one crown centre, two crown sides and two brims.

Stitching the crown

☐ Tack together the interfacing and wool sections of the crown around the stitching lines so that the woollen fabric is mounted right side facing up and the two layers can be handled as one.

☐ With the right sides facing, pin the two side crown pieces to the centre panel matching the notches and with the pins across the seam lines as in fig.3.

☐ Tack and stitch the seams, trim the interfacing seam allowance to the stitching and, with the seams opened out, tack and top stitch 3mm ($\frac{1}{8}$") on either side of the seam lines.

Using a block

If you have a block in the correct size, steam the finished crown lightly over a half filled kettle, and pull it on to the block, right side out. Pin the crown to the millinery block with drawing pins around the headline.

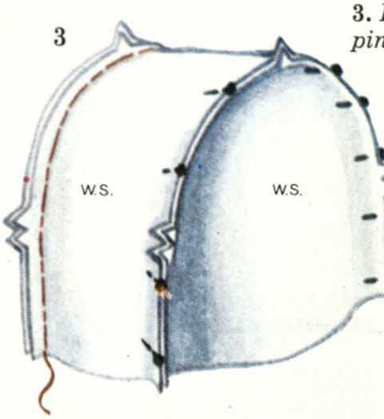
☐ For the final finish press the seams with a warm iron and a damp cloth on the block (fig.6). Remove any wrinkles by taking out the drawing pins and pulling down the crown firmly then re-pinning around the headline.

☐ Add more pins if necessary and finish the blocking by pressing the shape thoroughly all over. Leave to dry.

Pressing without a block

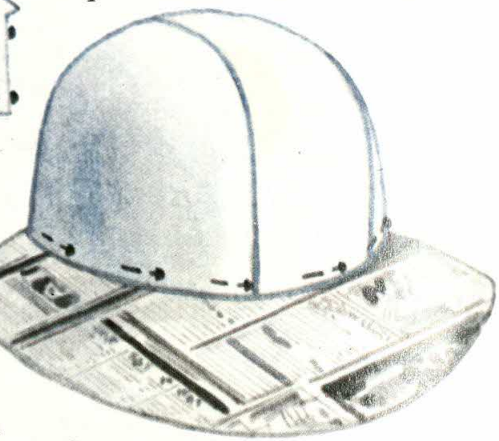
☐ To press a curved seam without a block, crush up two or three sheets of tissue paper in your hand so they form a curved pad. Holding this inside the

3



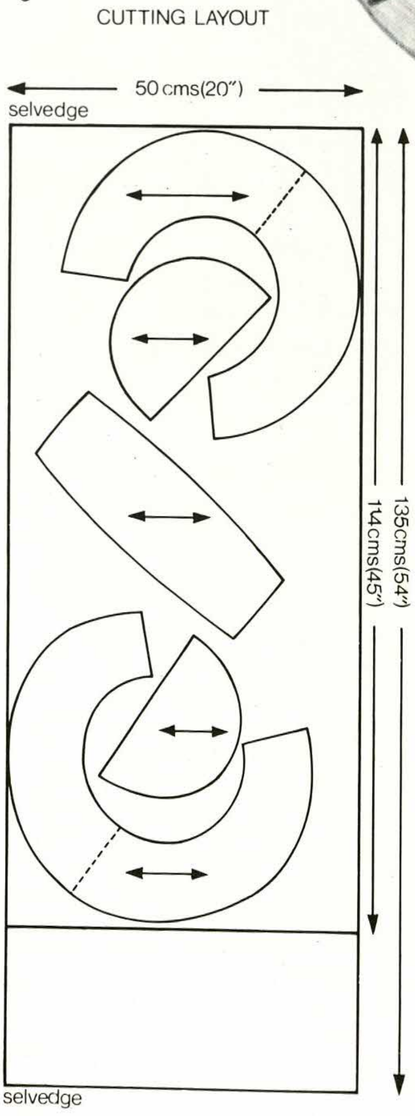
3. *Interfacing crown pinned and tacked.*

4



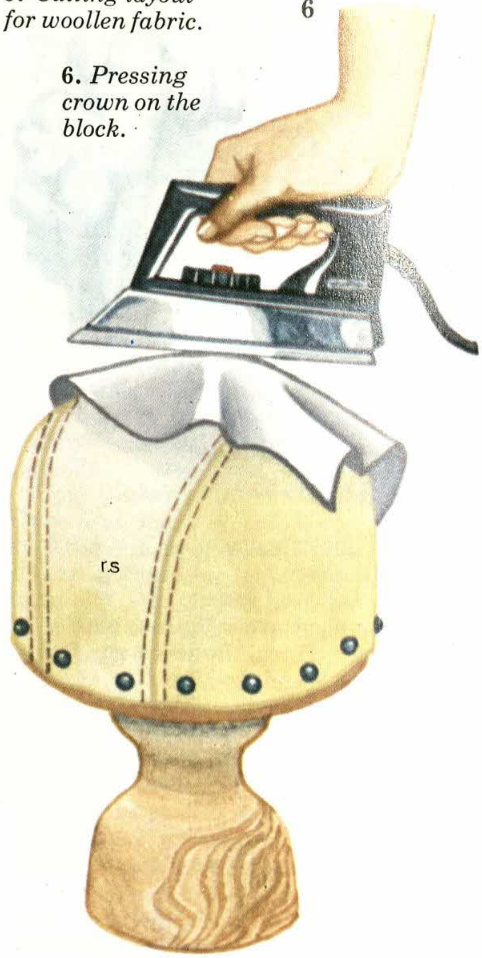
4. *Trial shape made in interfacing and paper.*

5



5. *Cutting layout for woollen fabric.*

6



6. *Pressing crown on the block.*

Coral Mula

shape, lay a damp cloth over the seam and press quite firmly. The pad can be moulded to fit the curve and it will protect your hand from the steam.

The brim

The brim is made by interfacing the two woollen brims and stitching them together to form four layers. To begin with, each woollen section is interfaced and worked separately. If adjustments to the pattern have been necessary in the trial hat the interfacing may need re-cutting.

☐ Stitch the centre back seam on each brim, with right sides facing, taking 1.5cm ($\frac{5}{8}$") turnings (fig.7).

☐ Trim away the interfacing seam allowance to the stitching line and trim the wool turnings to 5mm ($\frac{1}{4}$"). Press open.

☐ Lay the two halves of the brim together with centre back seams matching and with right sides facing. Pin around the outer edge. Tack and machine stitch. Trim away interfacing and layer the woollen turnings to 5mm and 7mm ($\frac{3}{16}$" and $\frac{1}{4}$") to reduce the bulk.

☐ Turn the brim right side out and tack carefully around the outside edge. Tack diagonally all over the brim to hold all the layers together (fig.8).

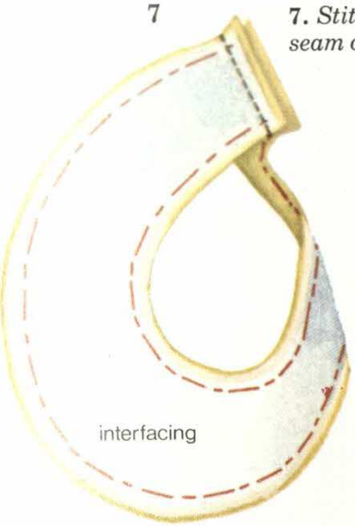
Stitching the brim

☐ Brims can be stitched in a number of ways. By stitching in a spiral (fig.9) a crisp shape and professional finish is achieved. Alternatively work one or two rows of stitching around the edge.

☐ Use a fairly large stitch and check the tension on a double scrap of interfaced fabric. The stitch must look good from both sides. Use the machine foot as a guide. The rows of stitching should be about 5mm ($\frac{3}{16}$") apart.

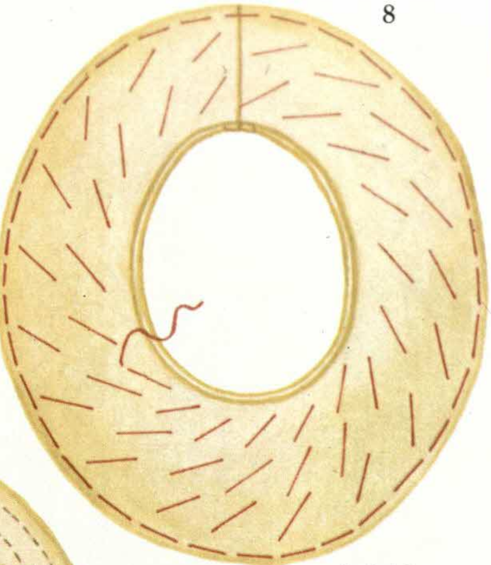
☐ To stitch the spiral shown here start on the outer edge at the centre back seam and stitch round once, move in and work the second row working in a spiral to avoid joining the stitching.

7



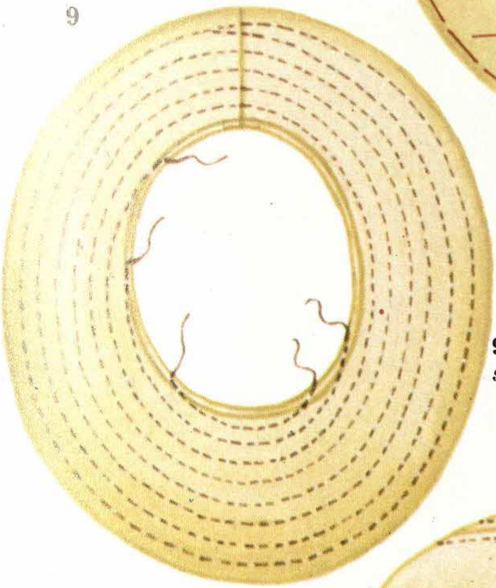
7. Stitching centre back seam on one interfaced brim.

8



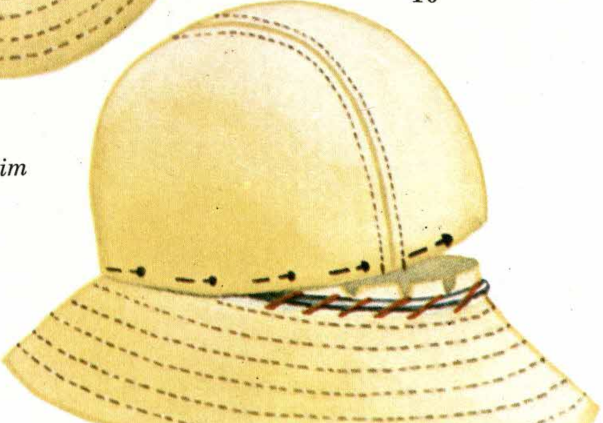
8. Brim turned right side out and tacked.

9



9. Brim stitched in a spiral from outside.

10



10. Pin crown to brim over headwire.

Joining the crown and brim

☐ Tack the headwire in place along the outside headline of the brim. The machine stitching may have shrunk the brim slightly so the wire must be attached where it fits and the turnings clipped.

☐ Turn under the seam allowance on the crown headline, pinning it from the outside. Use the same pins to attach the crown to the brim so that the folded edge of the crown just covers the headwire (fig.10). Put it on and check the overall shape in a mirror as the height of the crown can still be adjusted at this stage.

☐ Hand stitch the join, using the straw needle, double thread for strength and ladder stitch (Millinery chapter 1, page 576).

☐ Remove the headwire by clipping the tacking stitches and pulling it out from the inside. Remove all tacking.

☐ Neaten the inside with a curved petersham ribbon hemmed in place to conceal the ladder stitch (see Millinery chapter 4, page 664).

☐ Finally cut out and make up a crown from thin taffeta lining, slip this behind the head ribbon and catch stitch into place.

☐ Steam the hat lightly and pull it on to a block or pull it into shape on the head to obtain a flattering angle.

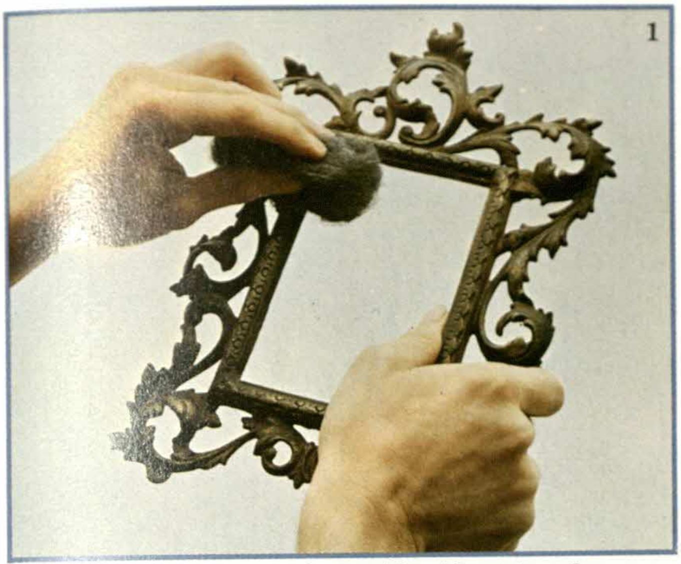
☐ Leave to dry in required shape.

Gilding simplified

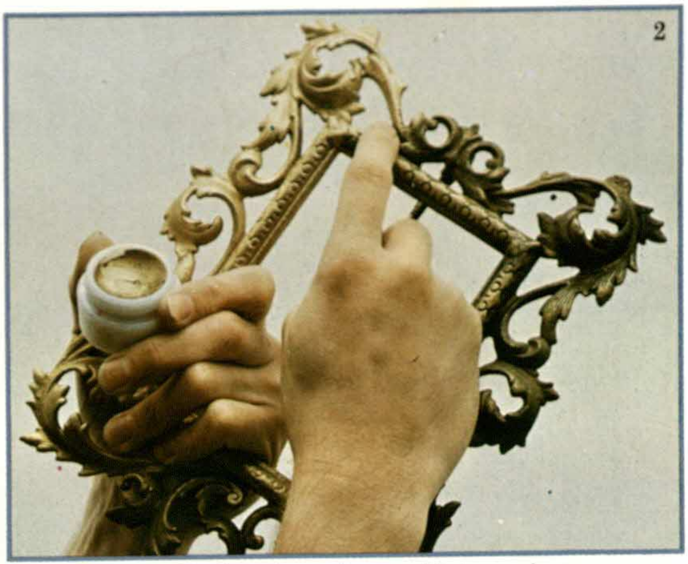
Colour — paint 20

Gilding is an old and distinguished craft which has long been practised for royalty, the aristocracy and the rich. At one stage it was so popular in Europe that almost anything within reach of a palace ladder was deemed eligible for enhancement by a thin layer of gold leaf and it was doubtless at this time that the metaphor for overdoing things, 'gilding the lily', originated.

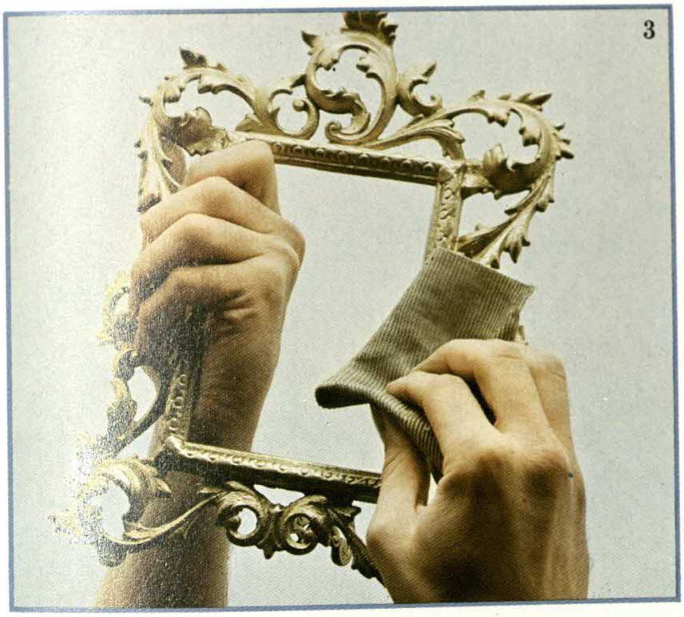
Neil Lorimer



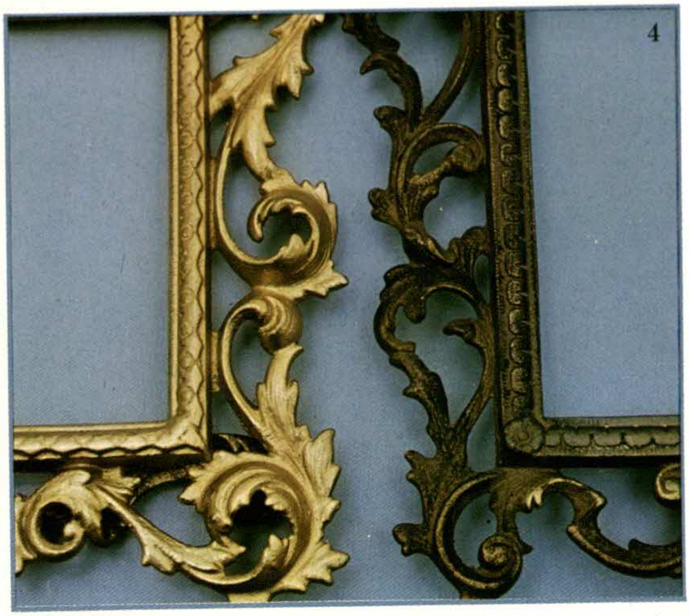
The frame is rubbed down thoroughly with steel wool.



Gold paste is rubbed on the surface and into crevices.



Finally the surface is burnished with a soft cloth.



The result is evident in this 'before and after' picture.

The application of gold leaf is still practised today by the same methods developed generations ago, but with the advent of new materials special paints and powders have also been developed which, although not true gold, give remarkably effective finishes. These, being inexpensive, considerably widen the scope of the craft. The relatively simple techniques of using imitation gold are described in this chapter while the art of true gilding, using real gold, is discussed later on.

Suitable surfaces

The new mediums on the market allow almost anything to be gilded with the simplest procedures and gilded objects such as old frames which have become tarnished or worn can be quickly and effectively rejuvenated. It is not advisable, however, to use these materials on fine ormolu (gilded metal) since ormolu is a special process which cannot be accomplished in the home. Not-so-fine metal work can be painted or re-gilded, however, as can wood and plastic—almost any surface, in fact, including bizarre, unlikely objects such as the flower pots and shells shown overleaf.

Richly gilded frames have the patina of gold leaf but much more simple and inexpensive techniques have been used.

Choosing the material

There is more than one material available for gilding and a selection can usually be purchased in art supply shops. One product is a liquid (Liquid Leaf) which automatically puts on an undercoat and gilds at the same time; the liquid contains golden particles which rise and cover the surface. Also available is a paste (Treasure Gold) which is rubbed on the surface and then polished to a shine. In appearance, the paste looks a little more authentic. The liquid has a deeper, duller, finish. Both materials come in several non-gold metallic tones such as brass, copper and pewter, as well as gold, and these may be mixed to give highlights or an antique effect.

Application

Preparation. It is necessary to clean the surface to be gilded thoroughly with an abrasive material such as steel wool or glasspaper before attempting to apply the gold finish. In the case of an ornate frame this is rather a painstaking operation but old, flaking finishes and grime must be removed to assure adherence of the new coating.

Protect your working surface before beginning by putting down newspaper.

Applying paste. Apply a small amount

Neil Lorimer

to one area and start working it into the surface with a small piece of cloth or your fingers. (Fingers work much better.) Gradually work the paste into the surface, covering it slowly and thoroughly. Do not be afraid to put on a little too much in order to fill tiny cracks and crevices, as the excess paste will be removed by polishing.

Finally, polish the paste with a clean cloth just as you would polish a newly waxed surface. This produces an even, glossy sheen.

Applying liquid. If you choose to use the liquid medium, this is also extremely simple. Follow manufacturer's instructions regarding thinning and take care to apply the paint as evenly as possible to eliminate brush strokes.

Sealing. A special sealer designed for protecting both paste and liquid gilding products is also available. This prevents tarnishing and is particularly recommended in a humid climate.

Flower pots

Most DIY shops stock ornate plastic mouldings used for decorating door panels and walls. These are inexpensive and can readily be cut to size and applied to plastic flower pots.

To apply mouldings to the rounded surface of the pot lay the cut mouldings in a warm oven for a minute or so. When removed they will be quite hot but they will also be pliable.

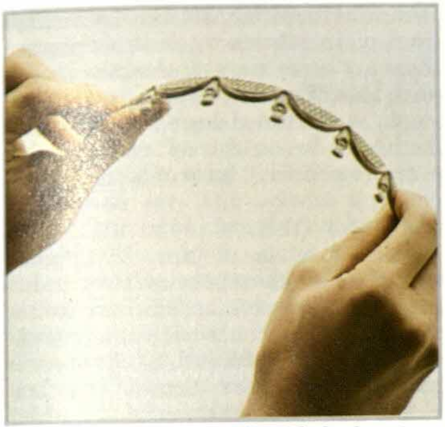
☐ Gently bend them to fit the contours of the pot, then leave them to cool. They should stay in their newly moulded forms.

Above: golden sea treasure produced with Midas-like simplicity by painting natural forms. The shells can be displayed singly or together.

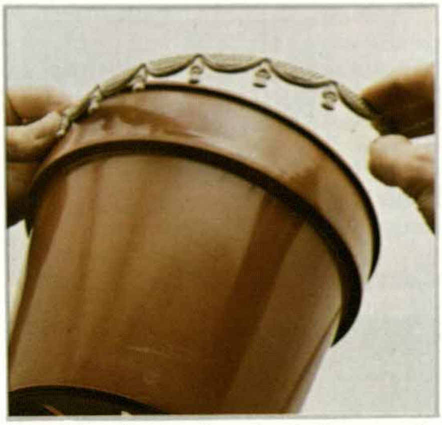
☐ All that is required now is to fix them to the pot with an epoxy glue—preferably a rapid setting one like Araldite Rapid.

☐ Once the glue has dried apply the gilding liquid or paste to the exterior of the pot and to the insides of the rim. It is also possible to highlight the moulding slightly by applying a different tone of paint or paste here and there along the moulding edges.

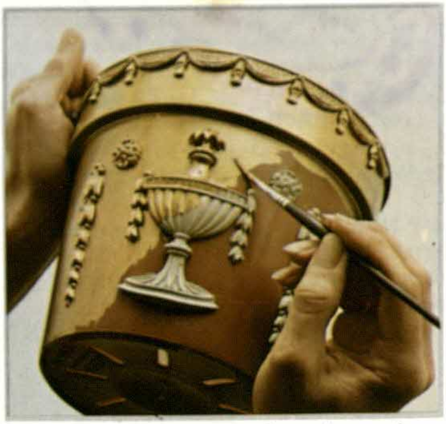
Right: empire-style flower pots make elegant decorations and belie their inexpensive origins. By Neil Lorimer.



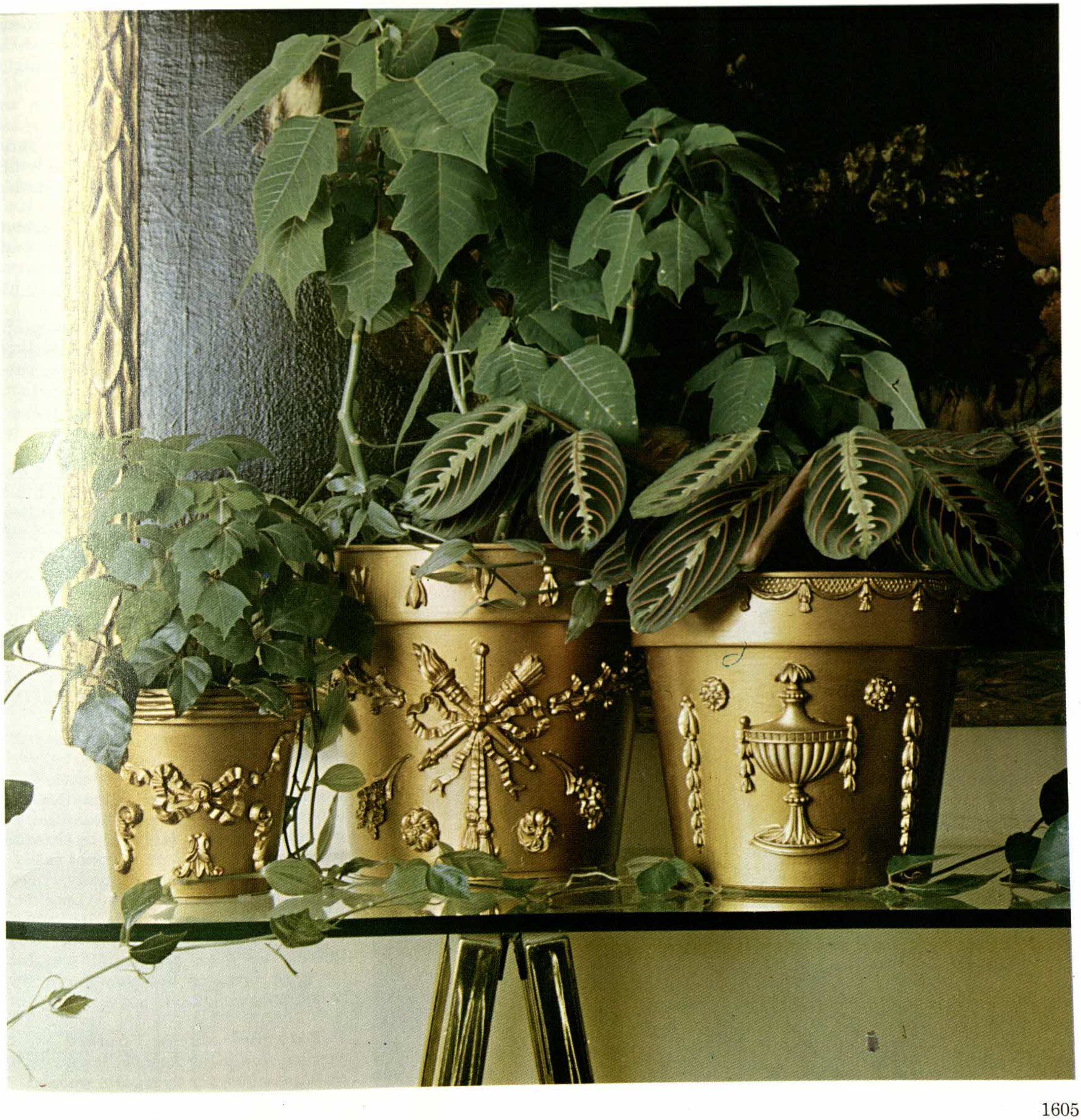
Moulding is made malleable by heating.



Moulding is glued to plastic flower pot.



Liquid 'gold' is painted on the surface.



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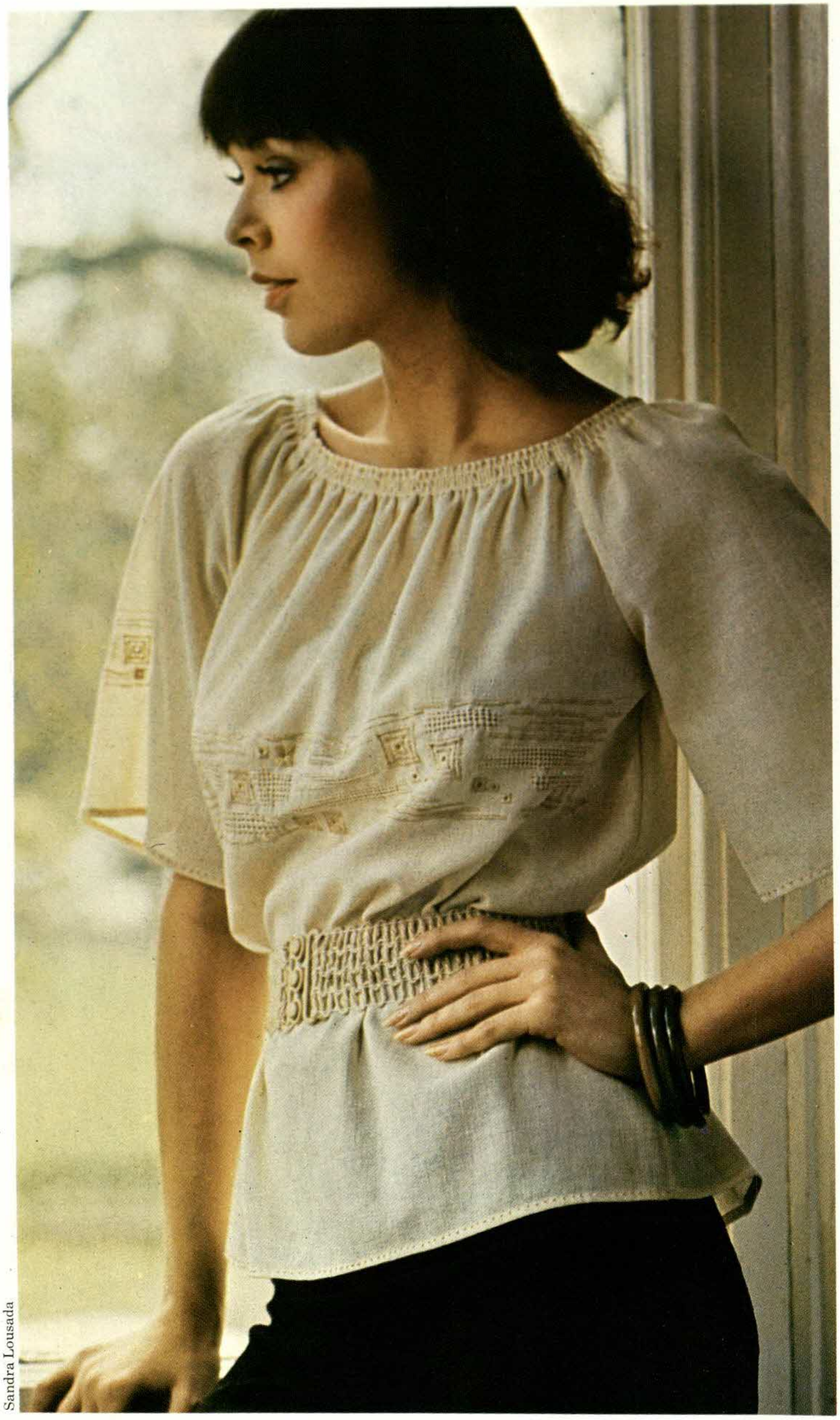
Lacy fabric with pulled work



Sandra Lousada

Pulled work stitches, worked in a random design by Aileen Baker, make an unusual border for a plain smock.

Beautiful lacy fabrics can be created from plain fabrics by embroidery and there are three main methods to accomplish this. The simplest method, pulled work, is described here and the other methods—drawn thread and cut work—are described in later chapters.

Pulled work

Pulled work is a form of counted thread embroidery because the stitches are worked over a specific number of threads. The stitches are pulled tightly as they are worked and, as the threads of the fabric are drawn together, spaces are left between them which form attractive patterns.

The technique can be used to decorate all kinds of household linen and some clothing, and looks most effective when worked in borders, panels or as single motifs.

Pulled work is sometimes known as drawn fabric work, but it should not be confused with drawn thread embroidery in which the lacy pattern is made by actually withdrawing threads from the fabric.

History. Pulled work is of European peasant origin and it was developed through working decorative stitches on loosely woven muslin. For this to be successful the embroidery had to be pulled tightly or it lay too loosely on the fabric. It was discovered that this process could create attractive patterns and the method became popular.

The stitches

The stitches used for pulled work are based mostly on satin stitch, back stitch and cross stitch—the essential difference being that they are pulled tightly after each movement so that the threads of the fabric are drawn together. There are many attractive variations of the three basic stitches and these are shown in figs.1-8. The drawing together of the threads is not shown in these diagrams in order to make the counting of threads and the method of working easier to follow. Fig.10 shows the worked stitches.

Equipment

Fabric. Because the stitches are worked over a specific number of threads of the fabric it is essential to use an evenweave fabric with threads which are large enough to count easily. The fabric should also be loosely woven so that the maximum effect is obtained when the threads are pulled together. Linens, cottons and wools with 18-24 threads per 2.5cm (1″) are all suitable for most projects but you could try hessian, scrim and some types of synthetic furnishing fabrics for making household items, or cheesecloth, muslin or calico for clothes.

Threads. Generally the thread used for the stitchery should be of equal thickness to the threads of the fabric, with the addition of thicker or thinner threads to vary the texture and pattern. If the fabric is a fairly heavy one which will unravel easily it is sometimes possible to remove threads from an unused edge and work the embroidery with these.

Other suitable threads are pearl cotton and crochet cottons in all weights, coton à broder and silk sewing threads. Stranded embroidery cottons and mercerized sewing cottons should not be used as they tend to fray and break.

Needles. Use a tapestry needle for pulled work as this will not split the threads of the fabric. Choose the weight of the needle so that it will pass between the fabric threads easily.

Frames. Always use a frame or ring for this type of work to keep an even tension, prevent the fabric from pulling out of shape and to enable the threads to be counted easily. The only exception to this rule should be when working an edging.

The design

Designs for pulled work are inevitably geometric since they are dependent on the weave of the fabric but this still gives scope for variety and interest. A design could be a formal one of balanced symmetrical shapes like the coasters shown in fig.10, or you could work more freely as on the smock shown opposite.

Colour. Usually the stitchery is worked in a colour which matches the fabric so that attention is focussed on the pattern of the spaces. In some modern designs, however, a contrasting thread is used and attention is divided between the pattern and the stitches.

Planning designs. The easiest and most accurate way of planning your own pulled work designs is on graph paper using one ruled line to represent one thread of the fabric.

Draw the overall measurements of the article to scale on the paper (or draw one section of the article if you intend to repeat the design in each section). Then on a separate piece of graph paper draw the shapes and approximate sizes of the motifs you wish to use and cut round them. Arrange these on your plan and pin them in place.

Most stitches are worked over four threads of fabric, although on a fine fabric you could work them over five or six threads and on a coarse weave you could work over three threads.

Decide which stitch you wish to use in each area and check whether the thread count will fit it, and adjust the size or shape of the motif as necessary. In this way you can achieve a balanced design without having to cheat over the number of fabric threads left between borders or motifs, for example, and it will be a useful guide when you work the design.

Working the stitching

To begin stitching, do not use a knot but bring the thread through the fabric some distance away from the stitching point and make a couple of small back stitches to anchor it. When the length of thread is finished, unpick the back stitches and darn in the surplus thread on the wrong side through the backs of the stitches.

To finish off a thread, darn in the end on the wrong side through the stitchery, making a small back stitch to secure it.

Basic stitches

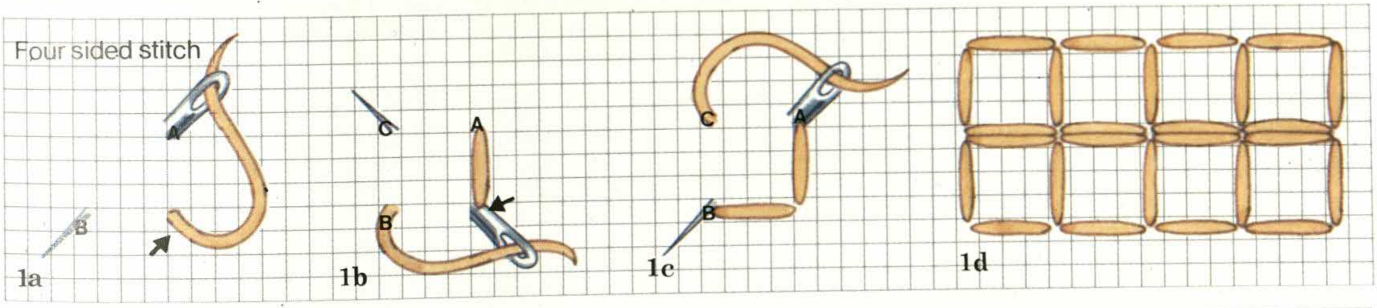
Four sided stitch. This stitch is worked from right to left.

☐ Bring the needle through at the arrow, insert it at point A and bring it through at B (fig.1a).

☐ Insert the needle again at the arrow and bring it through at C (fig.1b).

☐ Insert again at A and bring through at B to complete one stitch (fig.1c). Continue in this way to the end of the row.

☐ Turn the fabric round for the second row and work in the same way. Notice how the connecting stitches of the rows are worked into the same spaces (fig.1d). See fig.10i (overleaf) for worked stitch.



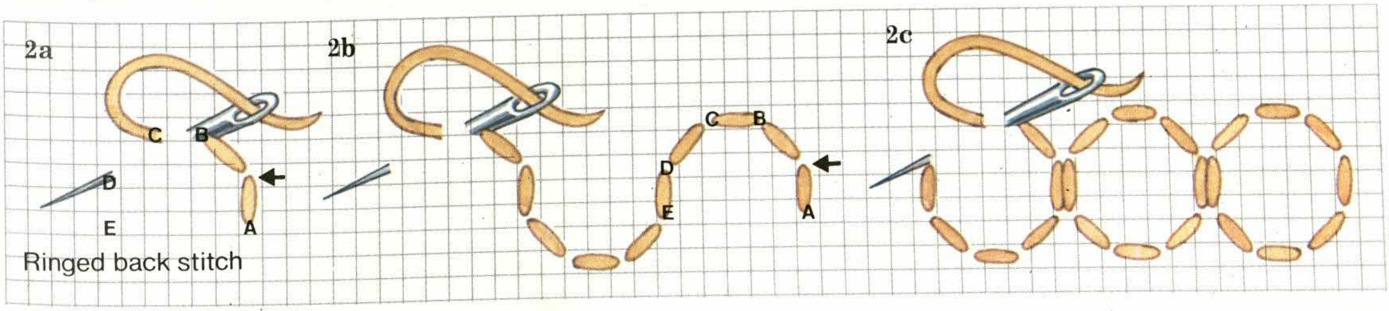
Ringed back stitch. This stitch is worked from right to left.

☐ Following fig.2a, bring the needle through at the arrow, insert it at point A and bring it through at B.

Insert again at the arrow and bring it up through the fabric at C.

☐ Insert the needle at B, bring it through at D, insert at C and bring through at E. Continue working half rings of back stitch in this way for the desired length of the row (fig.2b).

☐ To complete the rings, turn the fabric round and work back in the same way. Notice how all the stitches which connect the half rings are worked into the same holes (fig.2c). See fig.10a (overleaf) for worked stitch.

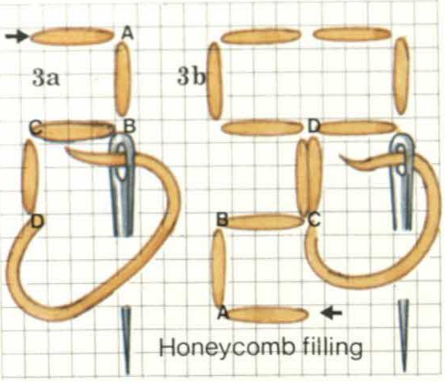


Paul Williams

Honeycomb filling. This stitch is worked from the top downwards.

☐ Following fig.3a bring the needle through at the arrow, insert it at point A and bring it through at B. Insert again at A and bring through at B. Insert at C, bring through at D, insert again at C and bring through at D. Continue in this way for the required length of the row.

☐ Turn the fabric round for the second row and work as shown in fig.3b to form the honeycomb pattern. Notice that where the rows connect the stitches are worked into the same holes.



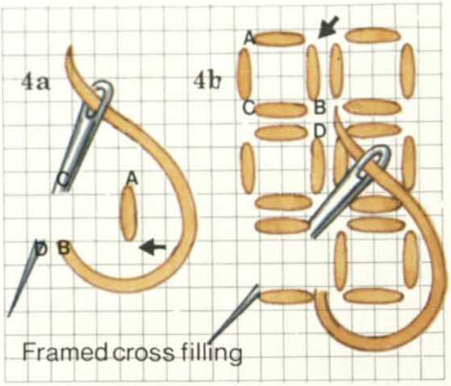
Framed cross filling. This stitch is worked in rows in alternate directions, starting from right to left.

☐ Bring the needle through at the arrow, insert at A and bring through at B (fig.4a). Insert at C and bring through at D.

Continue in this way for the desired number of rows.

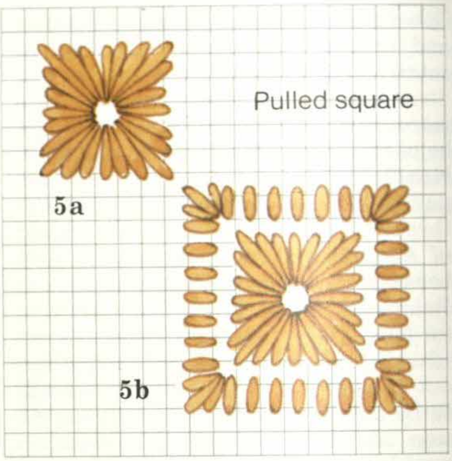
☐ Turn the fabric so that the first rows are horizontal and complete the squares in the same way (fig.4b).

Notice how these squares enclose three threads in each direction, with one thread between each square.



Pulled square. The centre of this pattern is an eyelet made by working 24 satin stitches over three threads with all the stitches into the same central hole (fig.5a).

☐ The border is worked round the eyelet in satin stitch over two threads with five stitches into the same hole at the corners. Notice how the inner edge of the border is worked into the outer edge of the eyelet (fig.5b). You can add as many borders as you wish.

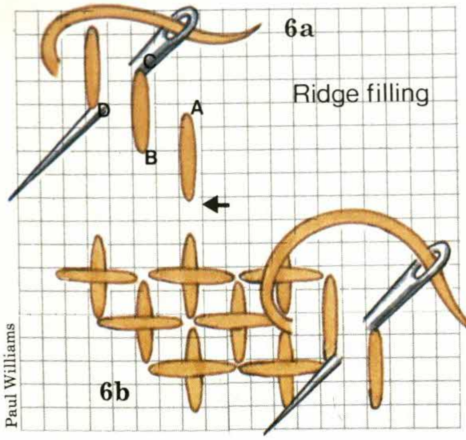


Ridge filling. This stitch is worked as an upright cross stitch in diagonal rows. The vertical half of each stitch is worked first from the lower right to the top left-hand corner of each row.

Following fig.6a, bring the needle through at the arrow, insert it at A and bring it through at B. Continue in this way to the end of the row.

☐ The horizontal half of each stitch is worked from the top left corner to the lower right corner. To begin the row, bring through the needle as if to start another stitch but skip back over one stitch and go through point C. Bring through at the bottom of the stitch being completed (point D). Continue down the row.

☐ Work the subsequent rows in the same way. Notice how the connecting stitches are worked into the same holes as the adjacent rows (fig.6b).



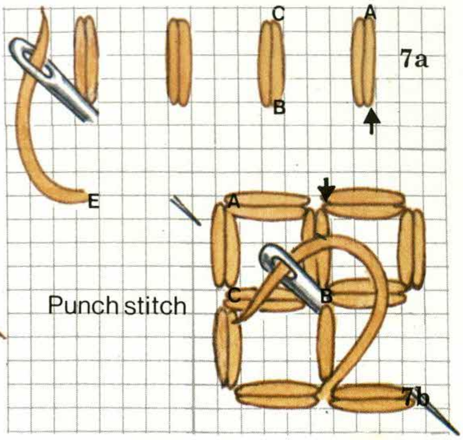
Punch stitch. This stitch is worked in rows in alternate directions, starting from right to left.

☐ Bring the needle through at the arrow, insert it at A and bring through at the arrow.

☐ Re-insert the needle at A and bring through at B, insert at C, bring out at B and re-insert at C. Continue in this way making double vertical stitches (fig.7a).

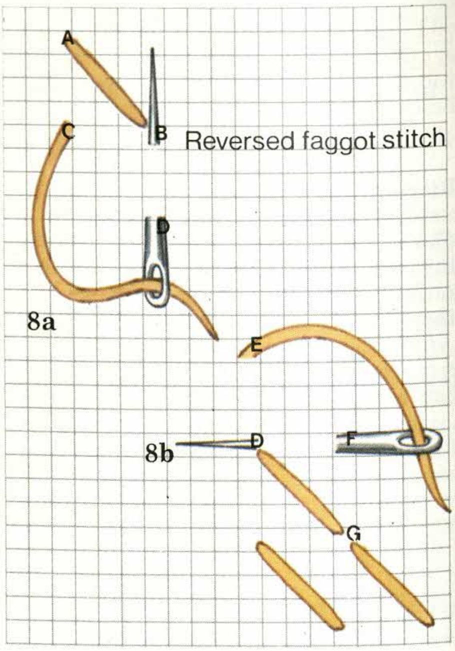
☐ To begin the second row, bring through the needle at E and insert it into the bottom of the last stitch of the first row. Continue in this way for the row, working two stitches into each hole as before.

☐ Complete the pattern by turning the fabric so that the rows are horizontal. Work double vertical stitches into the holes formed between each row as shown in fig.7b.



Reversed faggot stitch. This is worked in double diagonal lines from top left to bottom right. Bring the thread through at A (fig.8a), insert at B, bring out at C, insert at D and bring out at B, ready to begin the next stitch. Continue in this way for the end of the row. For the last stitch insert at D and bring out at E. Turn the work.

☐ Following fig.8b, insert the needle at F, bring out at D, insert at G and bring out at F. Continue in this way to the end of the row.



Paul Williams

Squared edging stitch. This is an attractive method of forming a hem around a tablemat or cloth. The first stage of the stitch is worked before the hem is folded under and the second stage of the stitch secures the hem in position. The stitch is worked from top to bottom. Allow a minimum of 15 threads for the hem turning.

☐ Following fig.8a, bring the needle through about halfway down one side of the fabric, level with the edge of the hemline. Insert at A, bring through at B, insert again at the starting point and bring through at B in readiness to begin the next stitch. Continue like this along the edge to the corner of the hemline.

☐ To turn the corner, insert the needle at C, bring it out at D, insert again at C and bring out at E, insert at C for the third time and re-insert at E ready for next stitch. Turn the fabric and work as before all round the edge of the fabric.

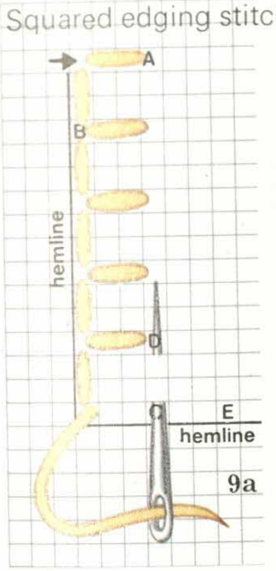
Fasten off.

☐ To begin the second stage of the stitch, fold under the hem allowance so that all the outer vertical stitches lie along the fold.

Following fig.9b, and starting halfway down one side, insert the needle on the wrong side of the fabric and bring out at the arrow. Insert at A, bring it out at the arrow and insert again at A. Pass the thread diagonally on the wrong side and bring round at B, on the fold. Insert at the arrow and bring out at C in readiness for the next stitch. Continue in this way to within four vertical stitches of the corner.

☐ To turn the corner, fold under the fabric along the adjacent side and start the next stitch in the normal way inserting at A, passing it through the third and fourth layer of fabric too. Pass the thread diagonally on the wrong side, bring round at B (fig.9c). Continue as before to within one stitch of the corner.

☐ Following fig.9d, turn the fabric, insert the needle at A, bring out at the arrow, insert at A and bring round at B. Insert at the arrow, bring round at D which is on the fold, insert at the arrow and bring out at F. Continue as before and work round the complete edge. Trim away the surplus hem allowance close to the inner double line of stitching.



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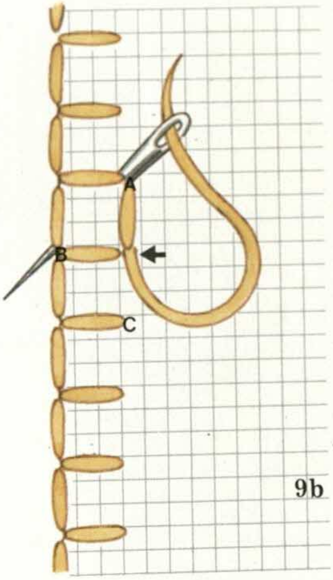
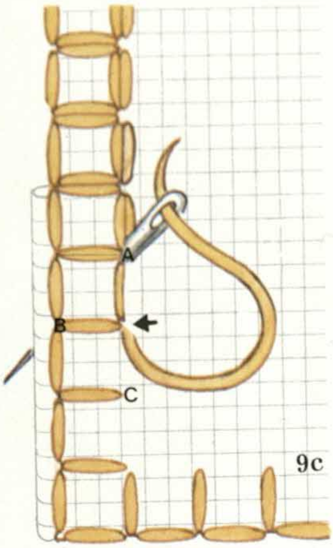


9b



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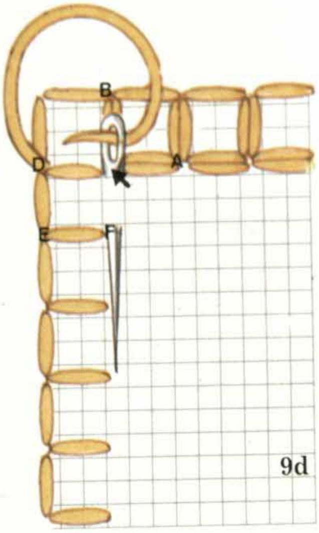

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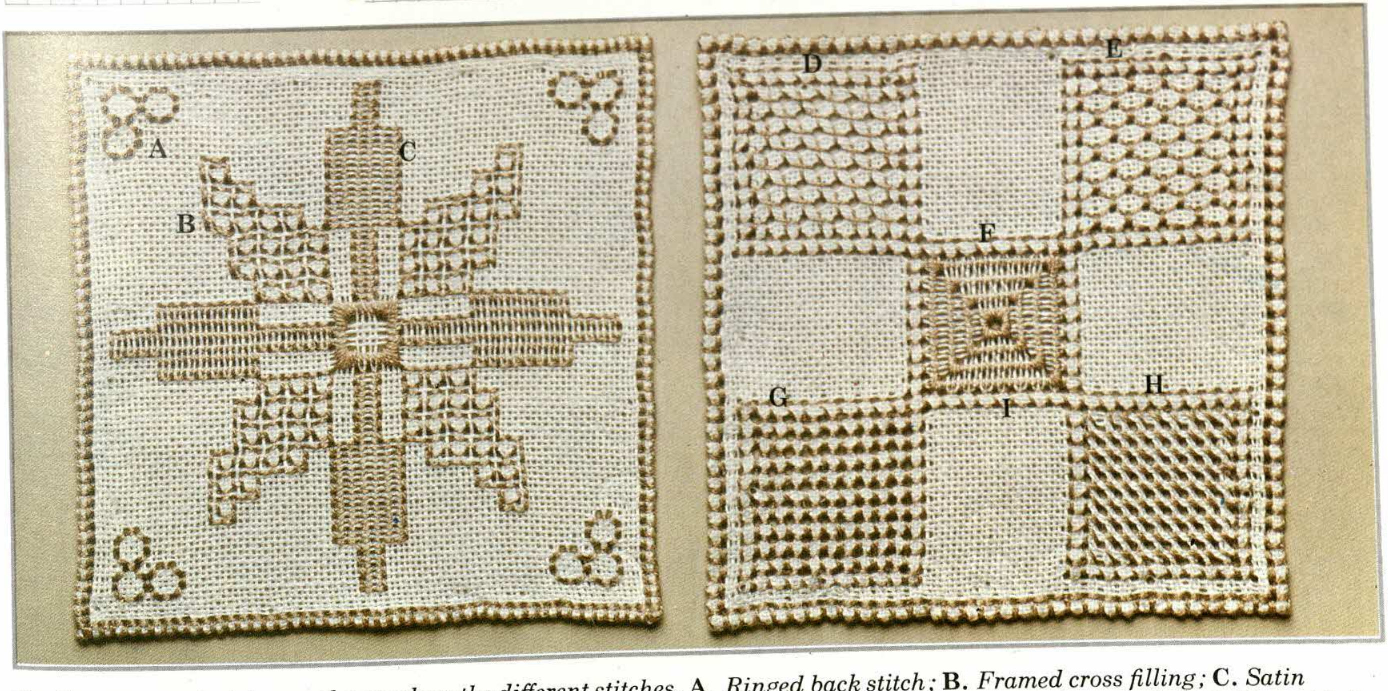


Paul Kemp

10. *Coasters worked as samplers to show the different stitches.* **A.** *Ringed back stitch;* **B.** *Framed cross filling;* **C.** *Satin stitch;* **D.** *Ridge filling;* **E.** *Honeycomb filling;* **F.** *Pulled square;* **G.** *Punch stitch;* **H.** *Reversed faggot stitch;* **I.** *Four sided stitch (which also outlines the other stitches on the right-hand coaster). Both coasters are finished with squared edging stitch.*

Growing bonsai – miniature trees

Flowers and plants 10

The art of growing miniature trees, which rarely exceed 60cm (2′) in height, is a living art form.

The Chinese and Indians are reputed to have grown miniature trees in the eighth century AD, but by the tenth century the Japanese had taken up and developed the idea. 'Bonsai' is, in fact, a Japanese word meaning 'trees growing in shallow containers'.

Bonsai are kept small by pruning and by keeping them in containers which restrict their root growth. As a result a 50-year-old maple which would normally reach a height of some 20m (65′) can be restrained to under 60cm (2′).

Some bonsai are purposely kept less than half this size. These exceptionally

Alan Duns

miniaturized trees are called *mame* and are usually grouped with several growing in one container. A tradition of grouped bonsai, however, is that an uneven number of trees is grown. This is because the Japanese regard uneven numbers as representative of longevity. (A group of four trees is never grown, as the word four in Japanese is similar to the word for death.)

The unusual shapes of bonsai are created by a combination of training with wires and dwarfing by pruning, and styles vary not only according to whether one or more trees are grown in a container but also by the shape of the trunk. Trunks can be trained to grow into upright, windswept, winding, gnarled or cascading shapes; each one giving an impression of trees grown in different climates or environments. A few examples are shown here.

Growing bonsai is an outdoor activity and trees should be brought into the house for only a few hours at a time to enhance a room and to be enjoyed contemplatively. For this reason it is useful to have more than one specimen on hand and alternate them indoors.

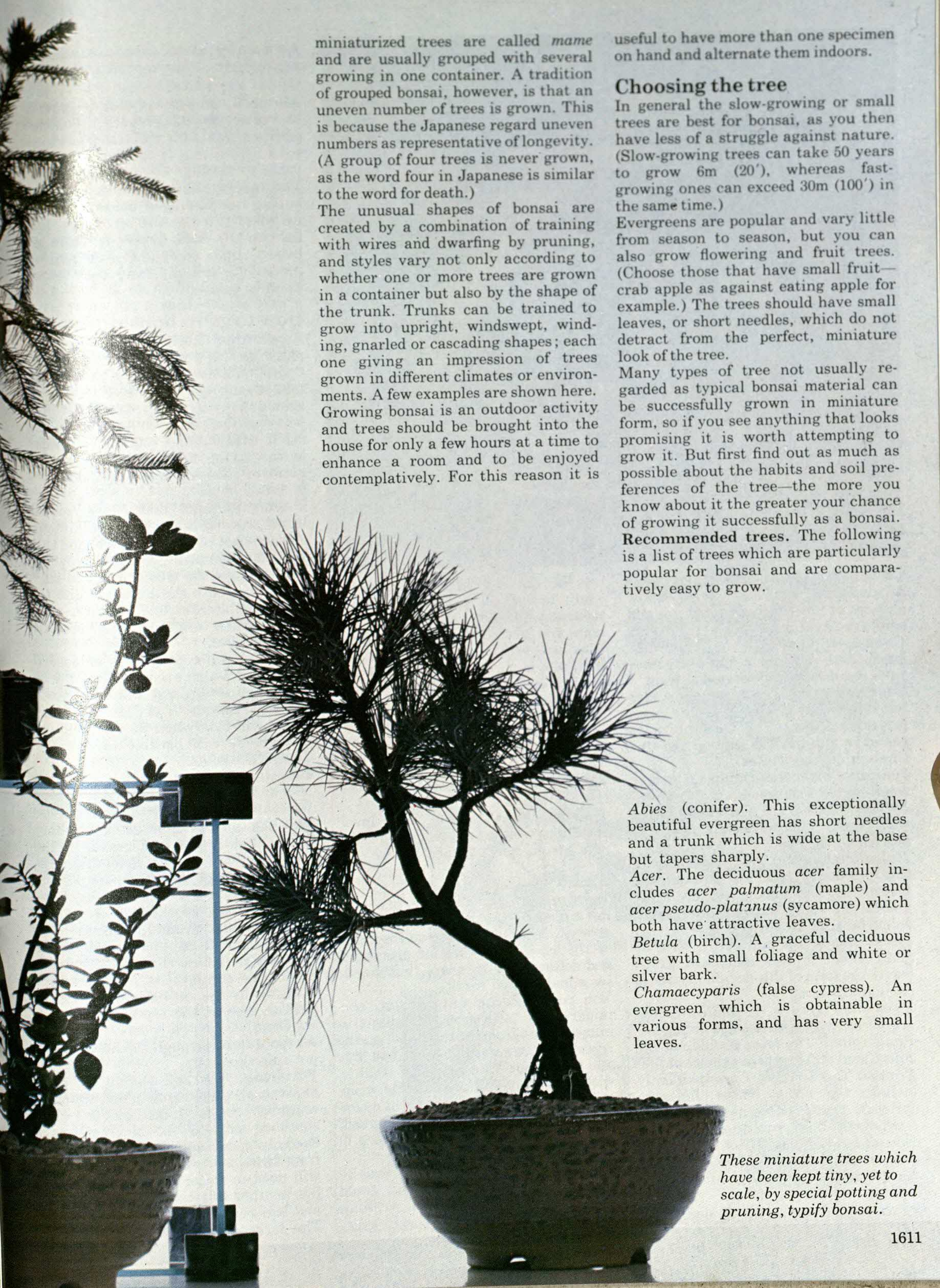
Choosing the tree

In general the slow-growing or small trees are best for bonsai, as you then have less of a struggle against nature. (Slow-growing trees can take 50 years to grow 6m (20′), whereas fast-growing ones can exceed 30m (100′) in the same time.)

Evergreens are popular and vary little from season to season, but you can also grow flowering and fruit trees. (Choose those that have small fruit—crab apple as against eating apple for example.) The trees should have small leaves, or short needles, which do not detract from the perfect, miniature look of the tree.

Many types of tree not usually regarded as typical bonsai material can be successfully grown in miniature form, so if you see anything that looks promising it is worth attempting to grow it. But first find out as much as possible about the habits and soil preferences of the tree—the more you know about it the greater your chance of growing it successfully as a bonsai.

Recommended trees. The following is a list of trees which are particularly popular for bonsai and are comparatively easy to grow.



Abies (conifer). This exceptionally beautiful evergreen has short needles and a trunk which is wide at the base but tapers sharply.

Acer. The deciduous *acer* family includes *acer palmatum* (maple) and *acer pseudo-platanus* (sycamore) which both have attractive leaves.

Betula (birch). A graceful deciduous tree with small foliage and white or silver bark.

Chamaecyparis (false cypress). An evergreen which is obtainable in various forms, and has very small leaves.

These miniature trees which have been kept tiny, yet to scale, by special potting and pruning, typify bonsai.

Even the berries are to scale in this perfectly proportioned bonsai.

A-Z Botanical Collection

Cornus mas (cornelian cherry). A deciduous tree which has small yellow clusters of flowers in early spring and edible red oval fruit later.

Cotoneaster (quince). The many varieties, both deciduous and evergreen, have small leaves, flowers and fruit.

Fagus (beech). This deciduous tree has a well-shaped trunk and pale green leaves in spring. The leaves turn to russet in autumn but stay on the tree throughout the winter.

Juniperus communis (juniper). A very small-leaved evergreen.

Lycium (boxthorn). A deciduous tree with small purple flowers and red berries.

Malus (crab apple). Many varieties of this deciduous tree are suitable for bonsai. It has small red or white blooms in early summer and small colourful fruit in autumn.

Morus alba (white mulberry). With its many small flowers and dark green leaves the form of this deciduous tree is particularly good.

Picea abies (spruce). A shallow-rooted evergreen with fine-needled foliage.

Pinus (pine). The most popular of the bonsai and the Japanese symbol of life.

Prunus. The deciduous *prunus* family includes the *prunus mume* (Japanese apricot), *prunus jamasakura* (cherry) —which dislikes pruning, and *prunus communis* (almond). The apricot is perhaps the easiest to grow. Choose a small-leaved and small-flowered variety.

Pyracantha (fire-thorn). A deciduous tree which has small leaves, and tiny white flowers in mid-summer. These turn to yellow or red berries in autumn, and last for about five months.

Quercus (oak). Another deciduous tree, oak is particularly good for bonsai as it is slow growing and has lots of branches.

Salix (willow). A deciduous tree, *salix babylonica* (the weeping willow) is particularly lovely.

Taxus (yew). A hardy evergreen whose trunk naturally looks gnarled as the tree grows.

Tilia europaea (lime). This lovely deciduous tree has red twigs and small, pale green, heart-shaped leaves.

To buy or to grow?

There are basically two ways of obtaining a bonsai—either you buy it or you grow it. If you buy one you lose some of the absorbing work of pruning it and determining its shape, but you do see a mature end result.

You can buy one fully grown, container and all, from a specialist nursery or—from autumn to spring when they are resting—you can buy one grown but 'root-wrapped' (that is, with its ball of soil protectively wrapped in some way) rather than in a container. You then plant it yourself, which means you have the choice of container.

Alternatively, as bonsai are usually rather expensive to buy, you could grow your own from a seed, seedling or cutting. Oak, willow, beech, sycamore and conifers are easy to grow in this way if you give them enough warmth, moisture and air. The drawback here is that it can take up to 100 years to develop a mature bonsai.

The major points to look for when buying or growing a bonsai are that the plant is small and attractive, that the trunk is thick in proportion to the height, that the plant itself and its roots look healthy, and that it has small leaves.

How to grow bonsai

An acorn or chestnut will grow if you plant it or, if you are lucky, you may find a suitable seedling. You can also take a cutting from a tree. (Cuttings should be 7.5cm (3″) long, cut just below a leaf node so that they can drink easily. Take softwood cuttings in the spring and hardwood ones in autumn, choosing wood of that year's growth).

Bearing in mind that bonsai means 'trees growing in shallow containers', choose a pot of the size and shape that will suit the plant you are growing. Also arrange the tree or trees in such a way that both the container and the plant complement one another. Containers with unglazed interiors are recommended.

Soil. Use different grades of coarse, mixed soil which are suitable for your particular tree, some water retentive and some porous. If you use too fine a soil it will clog when watered and not enough air will be able to circulate around the roots.

Planting. To plant, make holes in the side and bottom of a pot (if it is clay you will need to drill these, if plastic you can make them using a sharp knife). Put crocks and gravel in the bottom of the pot to help drainage, then fill the pot with compost putting the coarsest soil in the bottom of the pot above the crocks and the finest soil on top and around the roots.

A seed should be planted about its own height below the soil, a cutting about one third of its length, and a seedling in the ordinary way. Leave half an inch at the top of the pot for watering.

As roots come through the holes in the pot snip them off.

Watering. The soil should be kept moist at all times. How much water is required varies according to each specimen and to the time of year. Roughly speaking, watering can vary from twice a week to every day. You will need to water more frequently in hot weather and in the growing season and less in winter.

The larger-leafed varieties of bonsai

should have their leaves sprayed occasionally. But never do this in the heat of the day or while the tree is receiving direct sunlight. Sun on water droplets has the same effect as a magnifying glass—the leaves will be burnt or scorched.

Feeding. Bonsai like pot plants, need regular feeding with a liquid fertilizer during the growing season. This is because their roots are restricted to the areas in which they can stretch out in search of food.

Re-potting. After one year in the pot for a cutting or seedling, or two or three years for a seed, re-pot into a new container.

Re-potting is best done in the dormant season when the plant is not growing. So, re-pot spring-flowering trees in autumn, deciduous trees in autumn or early spring, and conifers any time except mid-summer and mid-winter.

Young trees need re-potting more frequently than old ones as they grow more quickly. To see if a tree needs re-potting look at the bottom drainage holes, if more than two or three roots are poking out then it needs re-potting. (If, on the other hand, none are visible some time after re-potting check the plant, it is a sign that the roots are unhealthy.)

Try to keep the new container as small as possible while accommodating the increased needs of the tree. Be sure there are holes in the new container for drainage.

Let the soil dry out before re-potting to make it easier to remove. Loosen the soil from around the roots, then re-pot with dry soil as this will not clog and prevent air circulating around the roots.

Water well, and then leave the tree in a protected place—in the garden if there is no danger of frost—for a few days to recover and settle in.

Root pruning. This is done when re-potting and does not, in itself, dwarf a tree—rather it promotes healthy growth. The fine roots feed the tree and the larger ones hold it firmly in the ground. Carefully knock off most of the earth, then trim the large coarse roots as, clearly, they are not really necessary to bonsai. Also remove any broken and dead roots. There should be a space of 2cm—2.5cm (¾″—1″) between the root ball and the side of the container.

Pruning roots in this way also helps to ensure that they get enough air. Too many roots tangled together (or heavy soil) prevent this. Remember to use a sharp tool when pruning the roots to avoid damaging or bruising them.

Wiring. Wire is twisted around the trunk or branches of bonsai to encourage growth in a particular direction, or to develop a gnarled-looking trunk. While its purpose is not to dwarf the tree it does restrict the flow of sap and, therefore to some extent, the growth of the tree generally.

Do not wire immediately following re-potting as you must allow time for the plant to settle.

Use copper wire—except for cherry trees or young delicate shoots in which cases pipe cleaners should be used. Do not wire unnecessarily and be careful not to damage the branch. Remove the wire as soon as the branch is set in its new position.

When wiring the trunk of the tree the end of the wire must be anchored so that it is taut enough to pull the trunk in the required direction. You can do this by inserting the wire through the drainage hole while you are re-potting, and then leaving it on the surface of the soil until you are ready to wire the trunk.

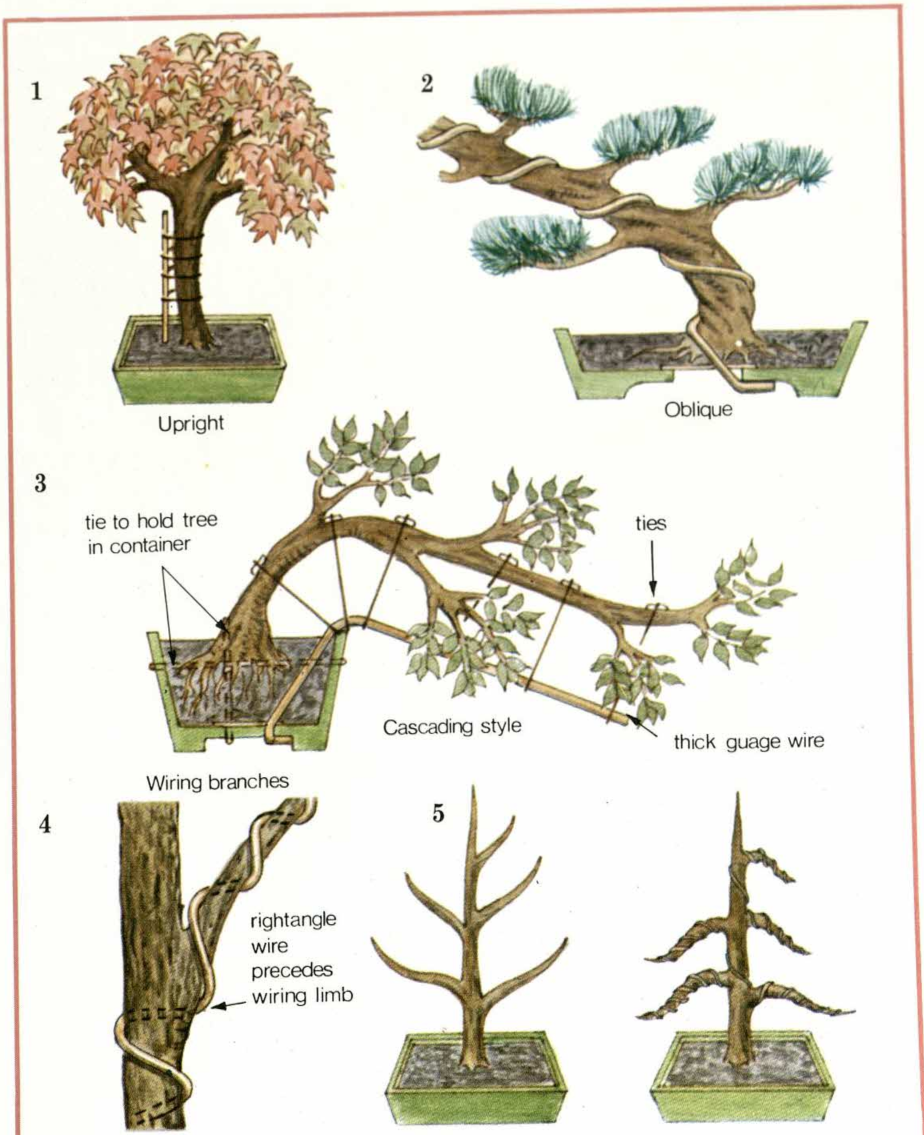
Wire will be necessary for several years and re-wiring may be required after about six months if the tree is relatively fast growing.

Before re-wiring allow an interval of a few months so that the bark will grow and cover any marks caused by previous tight wires.

Figs. 1-5 show how to wire for different bonsai styles.

Top pruning. Bonsai are top-pruned to give them shape and a bushy appearance. This should generally be done in spring. Never prune roots and the top growth at the same time, as this will give the plant too much of a shock.

Cut off the top tips to get a bushy look and prune carefully to give the tree the desired shape. Think about the final shape you want the tree to have, and consider the angle from which it will be seen. (If you buy a ready-grown bonsai you will only have to trim it, its basic shape will have been established long before you bought it.)



1-5. *Different styles of trees can be obtained by different wiring methods as these examples show.*

Paul Williams

Creations with unusual objects

Yarn — weaving 19

Weaving is a visual, tactile and involving experience and there are many materials apart from yarn which you can use as either the basic inspiration for a piece of weaving or as an addition to it. Materials such as beads, feathers and ribbons can often contribute much to the visual presence of a piece of work. You can use such objects for their colour, texture, or contour.

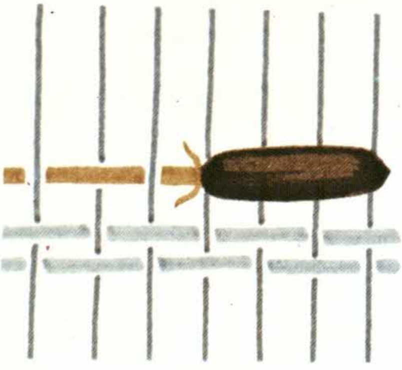
Sometimes *objets trouvés* can quite accidentally be the solution to a design problem. In one weaving for example, the warp threads at the bottom, which already had feathers hanging from them, needed some sort of extra weight. Fishermen's lead weights were ideal and added just the right visual effect. Unusual materials can add a whole new dimension to weaving tapestry on a frame loom.

Magpie materials

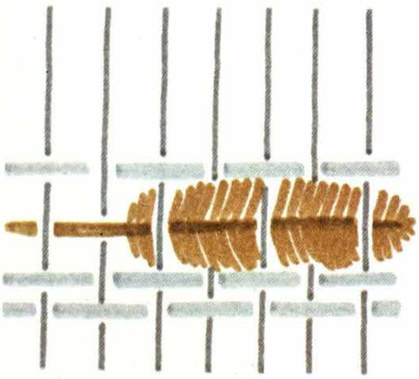
The frame loom allows the weaver great freedom in the use of objects and materials either as textural weft or as free-hanging elements. Quite ordinary things can be incorporated in tapestry to create extraordinary effects. Use materials that relate to your surroundings such as metal washers, synthetic fibres, wire, metal rods; shells, rope washed ashore, rushes; dyed stocking, raffia, netting, sequin waste or scraps of fur.

Wrap warp threads (Weaving chapter 12, page 892) with balls of tinsel, colourfully striped garden string or metallic glitter threads.

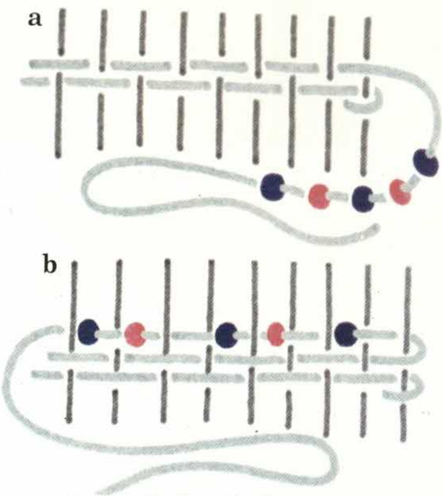
Hang objects from your weaving such as small toys, tassels, bells, shapes of glass or plastic, or anything else that catches your eye.



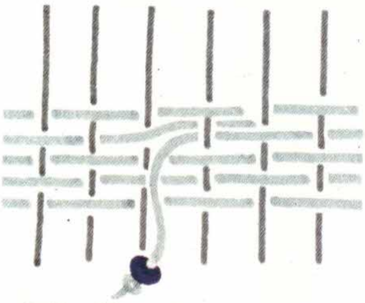
1. *Stem of bulbous object woven in.*



2. *Fragile object caught in warp.*



3. *Beads threaded on to weft.*



4. *Bead hung from weft thread.*

Victoria Drew

Dried plant material

When using anything as fragile as dried flowers or leaves, their condition and durability are important factors. To be quite sure that they are not going to crumble, either spray them before weaving with a clear spray, such as hair lacquer, or brush a clear glue on to flat objects such as leaves. You can buy already treated material or dry the leaves and flowers yourself.

Thick stems. Beware of stems or twigs that are too thick for your weaving as they can change and disrupt the tension of your warp threads. If you must use them, try to have them at the end of your work.

Weaving in dried objects. Weave up to where you want the leaf to be positioned.

If the object is flat (or will lie flat as will skeleton leaves or dried flowers), lay it in the open shed.

Either place your weft in with the object or weave around it using a bobbin.

Be very gentle especially when beating down.

Between rows of objects always have at least two rows of plain weave to strengthen and secure the weaving.

You can use objects when weaving on a table loom as well as in tapestry. Table looms are dealt with in a later chapter but the same rules apply.

Quite hairy or bulbous objects work well in a heavy weaving. Weave in the stem, leaving the textural element on the surface (fig.1.)

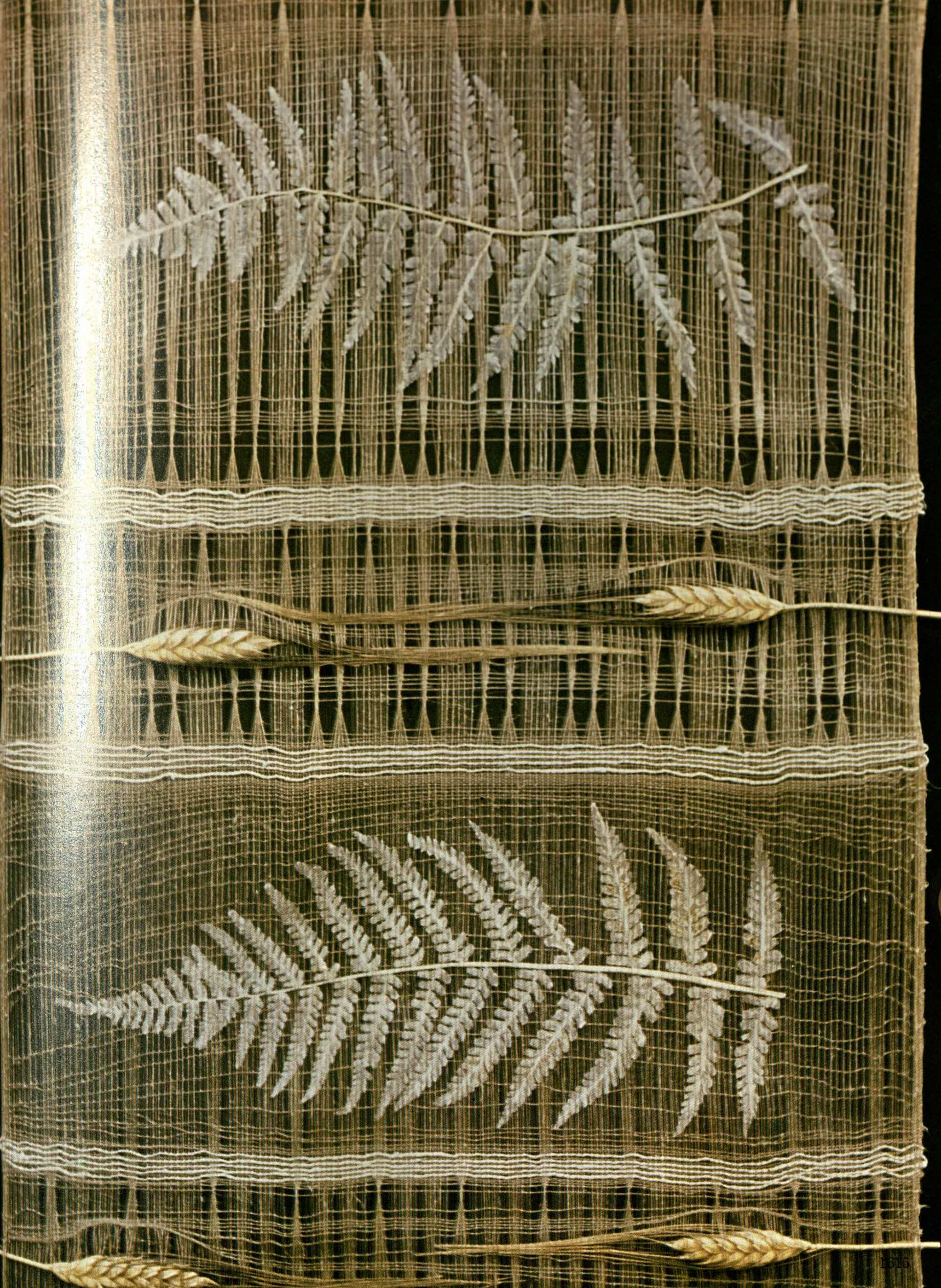
Flat objects can be woven in (fig.2) and work well in a quite open, light weave with possibly a thin linen warp and weft. Always be very gentle when weaving around fragile objects.

Beads

There are so many to choose from: antique ones, wooden, glass, Venetian, plastic, ceramic, papier mâché, shaped hearts, stars, fruit, teardrops, birds and many more.

The only problem with beads is that their holes are usually not very large. If you are weaving beads in with your weft thread, the hole has to be large enough to thread a needle and yarn through. When weaving them in just thread them on to the weft thread (fig.3a) and position them where you want between the warp threads (fig. 3b). Alternatively, you can hang them from a weft thread with a knot at the end of the bead and start a new area of weft (fig.4).

Right: fragile objects such as dried leaves and grasses can create a delicate effect. This piece of weaving designed by Joyce Griffiths, was woven on a table loom with varied spacing in the warp.



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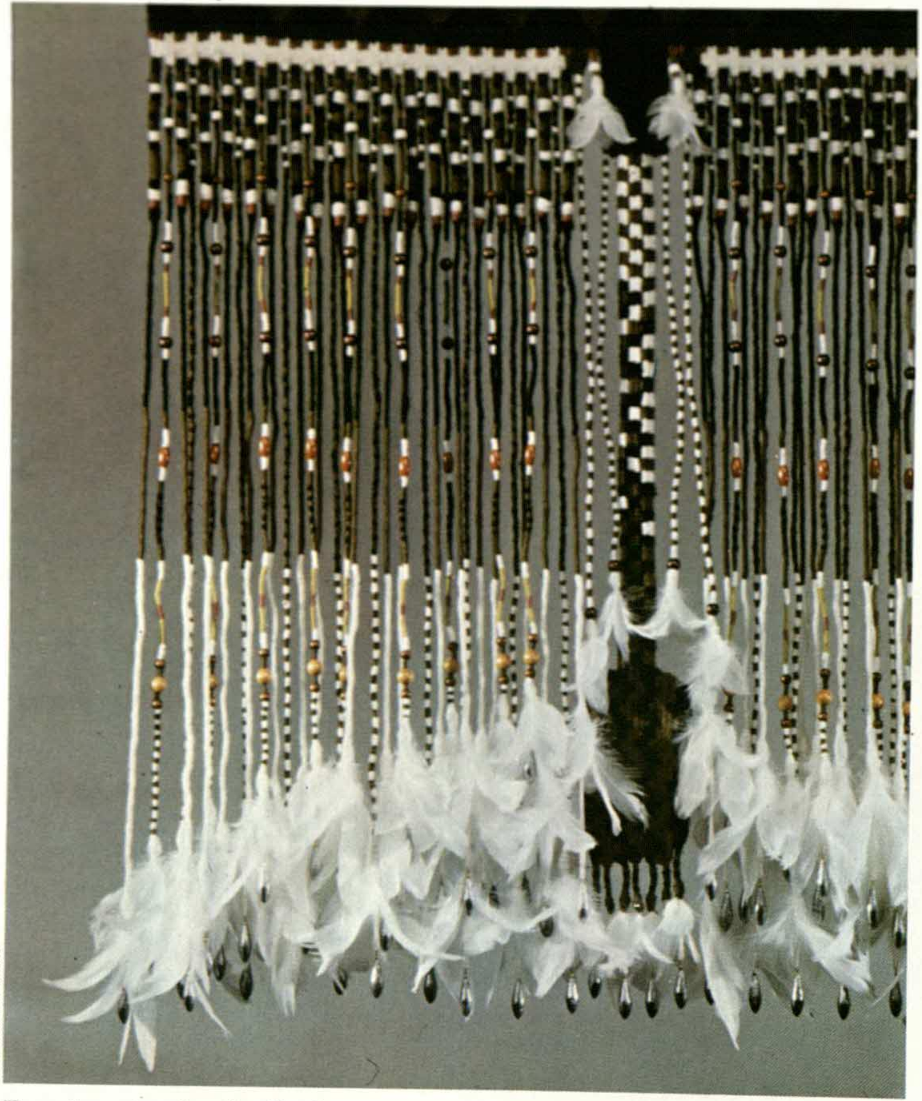


Candace Bahouth

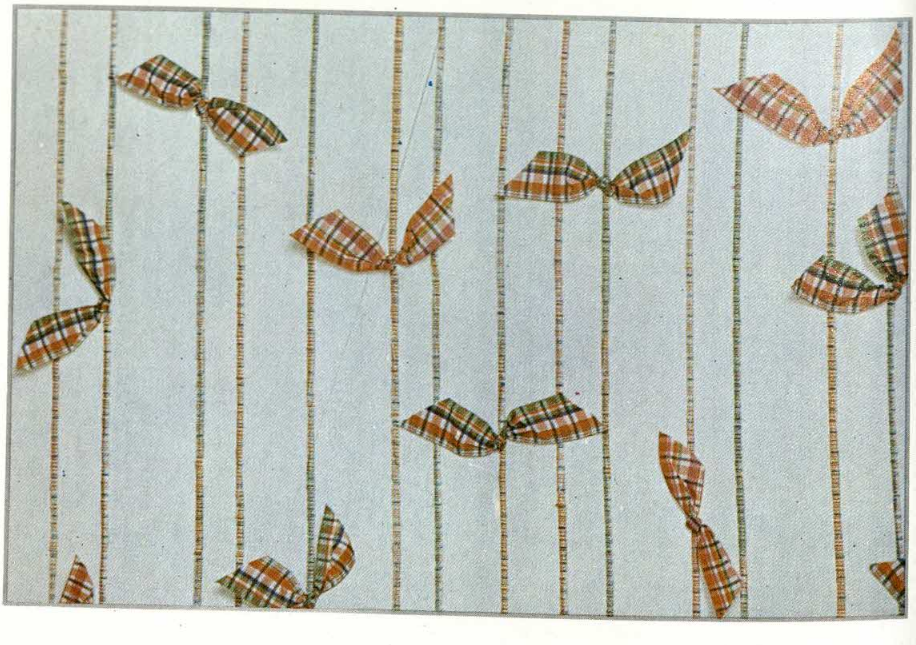
Left: detail of tapestry with long warp ends. Beads are threaded between areas of wrapping on each warp end. Designed by Candace Bahouth.

Free-hanging beads. Beads are most beautiful when hanging freely from warp threads with wrapping or threaded on to the fringe (figs.5 and 6). After your weaving is finished and you are using beads with long areas of wrapping, always be sure to cut the warp threads you are using and thread the beads through before retying the warp threads to start wrapping (Weaving chapter 12, page 892). As a fantasy touch, beads may also, of course, be sewn on the hanging after the weaving is finished.

Ribbons

There is a great variety of ribbon: old faded ones, printed, satin, embossed and velvet to name but a few. It is fun to use a weft of wide, thick ribbons which beat down quite a bit but which can be three-dimensional when built up to beautiful strata of colour and texture. Thick wide ribbons give the three-dimensional effect that thick yarn gives.

Wrapping with ribbons. Ribbons can be wrapped around the warp threads, or a bow can be tied at the end of the wrapped threads, perhaps combined with a dangling bead or a bit of lace.



Chris Lewis

Detail of weaving using ribbons and bows. Designed by Hilary Auden.

Suede and chamois

Unused pieces of chamois leather and suede can sometimes be bought from leather goods manufacturers. Chamois is ideal but suede is just as useful if it is soft and pliable.

Cut the suede or chamois into strips of varying widths and lengths and use the strips like a piece of yarn. Those warps which are missed out in one row should be covered in the next to keep your weaving firm (fig.7).

You can also use suede and chamois for making the soumak stitch or the ghiordes knot (see Weaving chapter 11, page 856).

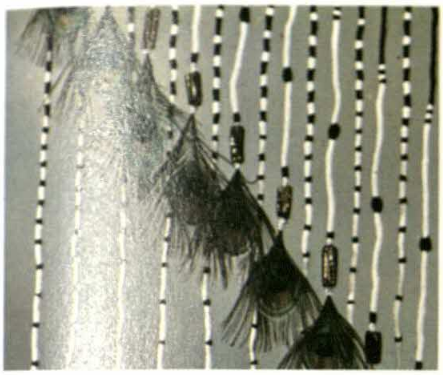
Thick suede can be woven in a straight strip without pressing or beating down too much. It looks good with a coloured warp and the suede has a beautiful matt finish.

Try not to make two successive rows of loops or knots as they will not hold properly. Always weave at least two rows of plain weave before making another row of knots to strengthen the fabric.

It is also fun to scissor cut bits of coloured suede in circles and thread them with beads on to hanging warp ends.

Feathers

Local butchers can often help by keeping you supplied with plumage from domestic and game fowl—polka-dotted guinea fowl feathers, shimmery gold and red-brown pheasant feathers or sturdy wing and tail feathers of turkeys and geese. Feathers can also be collected in the country. Failing that, feather dusters can be artificially re-



Detail of tapestry shown right.

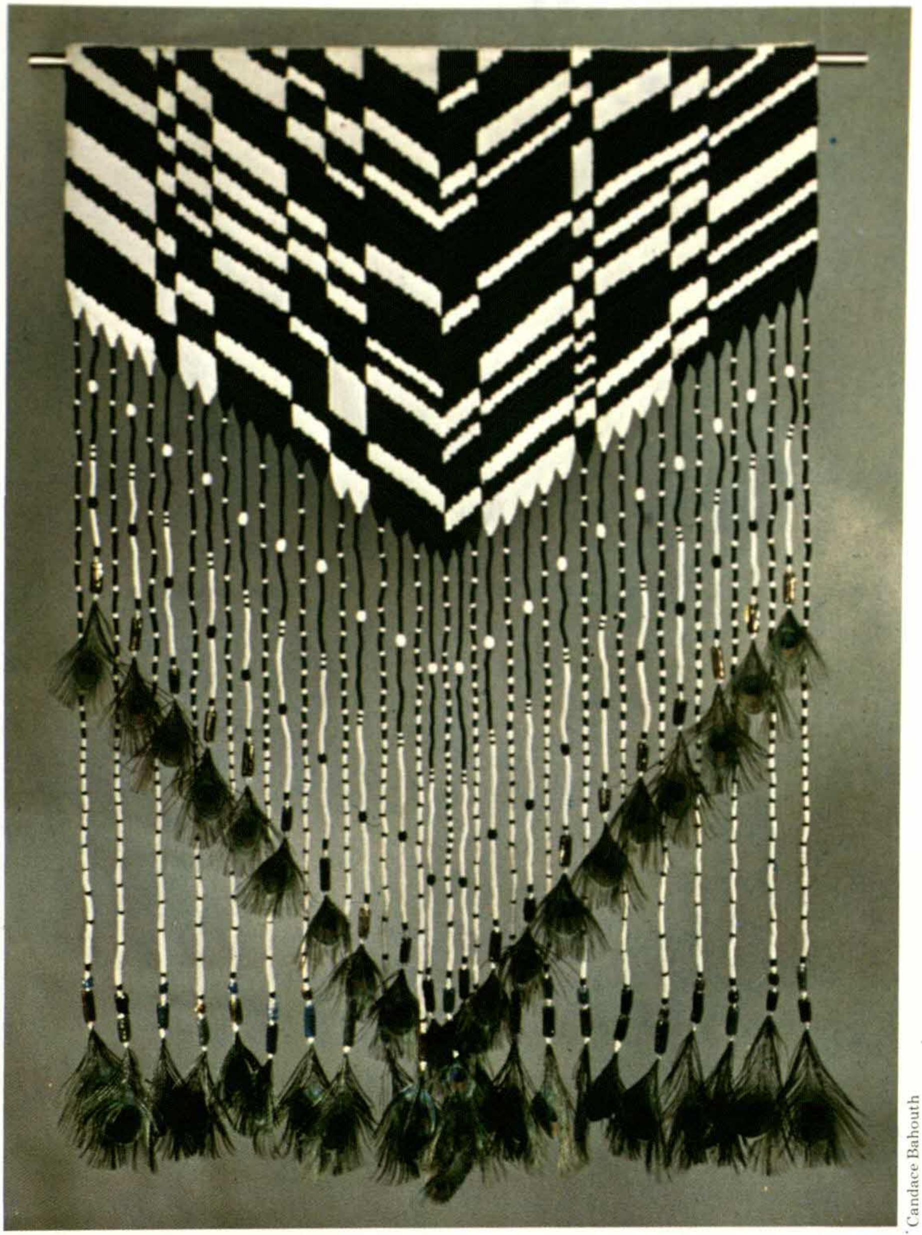
cycled. Shops that sell fishing tackle have beautiful feathers but they are expensive.

Weaving in feathers is a slow process, but if you can build up an area weaving in feathers it is worth the time and patience.

Make sure the feathers are long enough—neck feathers are wonderfully colourful but much too short for weaving. If the feather has a thick shaft, hammer it flat first. If the shaft does not need hammering, use your fingers to take the stiffness out. Weave in all of the shaft and overlap with the next feather (fig.8). Between each row of feathers, remember to weave in ordinary weft to strengthen the fabric.

Wrapping feathers. Feathers are also very effective at the end of a wrapped thread. You must have a long enough shaft and feather to wrap it securely so that it will not slip out. If it is a long feather, like a peacock's, you must hammer the rather three-sided shaft flat and cut it to about 10cm (4″) long before wrapping around it.

Right: peacock feathers used to set off a stark geometric tapestry. Designed by Candace Bahouth.



Candace Bahouth

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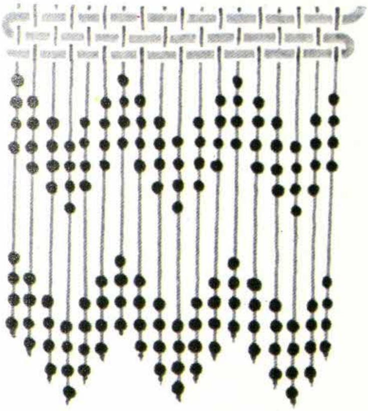

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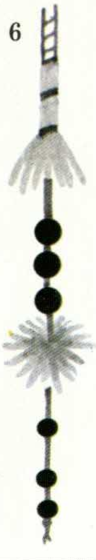

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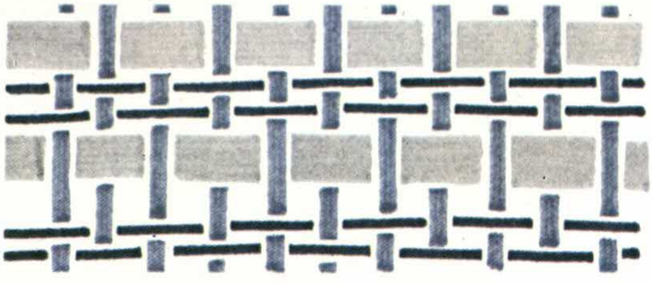

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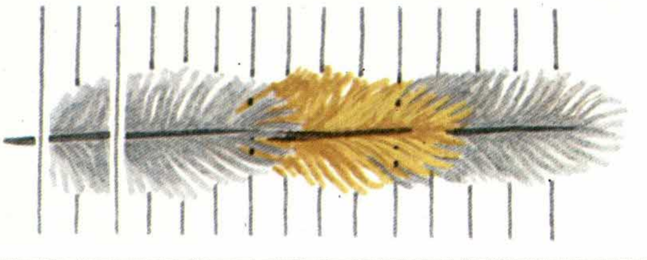

5. *Small beads threaded on free-hanging warp ends.*
6. *Wrapped warp end with beads.*
7. *Suede strips woven as weft.*
8. *Overlapping feathers.*

Victoria Drew

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Soldered jewelry from templates

Once you are familiar with soldering (Metal chapter 16, page 1166) you can move on to making metal jewelry. Be sure to use good quality metal as impurities, especially in copper and brass, cause marks to appear beneath the lacquered surface of the finished product.

Designing

Start by doing some rough sketches around the basic idea you have for a belt buckle, brooch or pendant, experimenting with various shapes which will suit the piece. From these rough notes select what pleases you most and make a cardboard model the shape and size you want the finished article to be.

If it is one motif to be repeated, as for a belt, then make several cardboard examples to achieve the overall effect of the completed piece. Where the design is made up of layers of material as in the necklace shown here make these up in cardboard and superimpose them to give the desired effect. A simple linear pattern, such as the spiral on the belt buckle in the photograph, can be simulated by drawing it on the cardboard model.

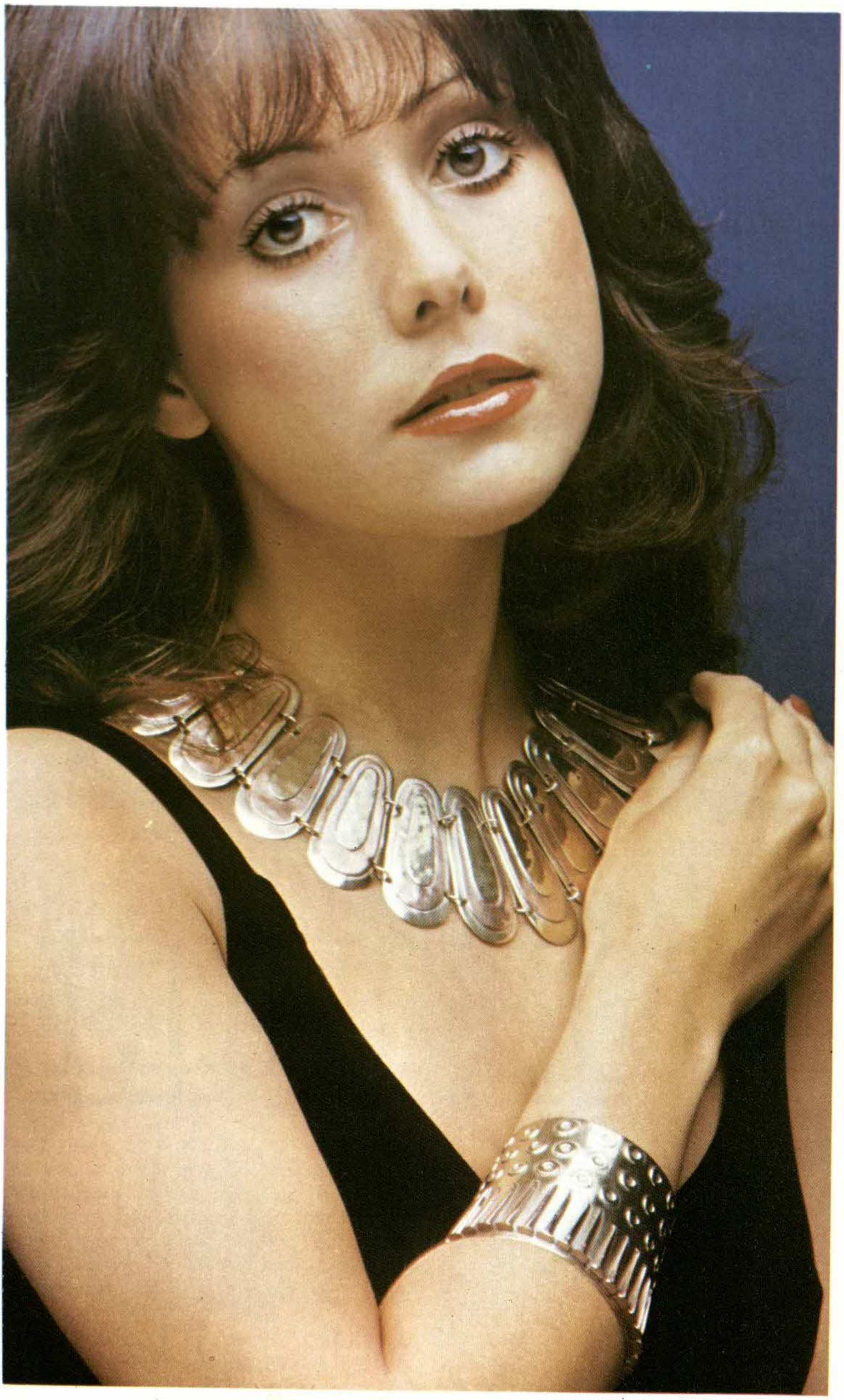
Metal templates

It is often useful to produce a metal version of a cardboard template, particularly if you want to make a number of repeats. A metal template is far stronger than a cardboard one. In addition it gives a permanent record and you can always re-use it for further repeats of the design.

Metal templates should be made from thin aluminium or brass which can be scratched with a scriber or a sharp nail. Make the template as accurately as possible and as close to the original design as you can manage. Trace the cardboard shape on to the metal and cut out the metal template with a pair of tin snips or a piercing saw (Metal chapter 12, page 836). Flatten it using the polished end of a hammer on a smooth steel block. Distortion may occur, particularly if the metal is aluminium, but this can be corrected by filing.

Using templates

Place the metal or cardboard template on a clean sheet of the metal you have selected for the finished piece and scratch the outline with the scriber or nail. Carefully cut out the metal using either a pair of tin snips or a piercing saw. (Unless you have both straight and curved snips you will find it easier to work with a piercing saw.) Bear in



Steve Bicknell

A necklace consisting of layered metal pieces linked by jump rings. The bracelet incorporates nails and washers in the design. Designer: Helen Newman.

This belt buckle makes use of silver wire fashioned into a pattern which is then soldered to the metal base.

mind that careless cutting will cause snags in the metal and require laborious filing to remove, and distortions of the pattern can occur from inaccurate filing.

Repeat the flattening process as described for the metal template. The design is now ready to have any holes punched or drilled.

Assembly

Silver solder the appropriate findings or jump rings which are required.

If the design is made up of layers, the layers should now be joined together. This is done by tinning and sweating the pieces together using soft solder. Be careful not to tin too thickly as this causes a lot of unnecessary work when you get to the cleaning stage. Make sure the designs are securely fixed with no gaps to trap moisture between layers.

Links. If the work consists of a number of sections or motifs these should be polished before assembly since they will be easier to handle. (Polishing is discussed further on.)

Once all the individual sections have been cleaned and polished they should be joined with strong but unobtrusive links in the form of jump rings. Make the jump rings to the size required and use round-nosed pliers to close them.

If they need to be very strong the ends can be soldered. Once in place apply a drop of flux on the ends (which should be touching), heat the jump rings and apply the solder. Work with as small a flame as possible so that the heat does not spread to connecting links.

Cleaning

Once all the soldering is done, rinse the finished work in cold water. You will now need a scratch brush (a wire brush) or some emery paper to remove surplus solder. Cover your nose and mouth with a mask during this operation as solder contains a high proportion of lead and should not be inhaled. Once all excess solder has been removed the work is polished.

Polishing

This can be done in several ways. If you have no equipment, use varying grades of emery paper finishing off with a very fine grade paper. Then polish with metal polish.

If you have a power drill fix a polishing mop to it, apply a polishing compound and polish the metal. Be careful not to over polish as the design could disappear.

Lacquering

First remove all grease from the article and then paint on a metal lacquer. Take care to perform this last step in a dust-free atmosphere. Apply two coats of lacquer to prevent streaks from developing.

Jewelry need not be confined to metal. Colourful stones, along with nails and washers, have been combined to enhance this pendant and chain.

Glass 14

Animals from glass rods

If subjected to sufficiently high temperatures glass will soften. By heating glass rods over a blowtorch until they become pliable, the rods can be modelled into a wide variety of decorative objects such as animals, flowers, jewelry and Christmas decorations. This chapter explains the basic techniques of modelling with glass rods and shows you how to make two simple objects—a dachshund and a swan. Once you have become proficient in the techniques you can go on to more ambitious projects.

Glass rods come in many different colours, both clear and opaque. The glass rods used in this chapter are made of soda lime which has a low melting point—about 530°C (1000°F)—but other types are available.

Alan Duns

Glass rods are supplied in lengths of 7.5cm to 30.5cm (3″ to 12″). A number of different diameters are available but the most useful for making glass animals are 3mm to 9mm (⅛″ to ⅜″).

Glass jars and bottles provide another supply of glass which is readily available and does not cost anything. These can be broken up and used for modelling: place the bottle or jar on a hard surface, wrap in a rag to prevent splinters flying out and smash with a hammer. The pieces of glass can be left in their original shape and embellishments added. For example, an appropriately shaped piece of glass could be turned into a fish by softening the sharp edges and adding blobs of glass for eyes and mouth by the methods described here.

Position for working

Because melting glass is a potentially dangerous occupation, it is essential that you should learn the correct way of working. Make sure that your chair is comfortable and the correct height for your working surface. The elbows should rest on the surface with the hands in easy reach of the flame. Make sure your working area is well ventilated.

Using a blowtorch

Glass rods are melted by holding them over a blowtorch. There is a number of different types of blowtorch that can be used for making glass animals. Professional makers of glass animals use torches which run on gas and compressed air. These are complicated to use, but necessary for detailed work. For making simple glass animals a blowtorch which runs on gas alone, such as the Sievert 3940, is adequate. This torch consists of a flame nozzle, a length of rubber tubing, a valve to control the flow of gas and a gas cylinder. The blowtorch is assembled as shown in fig.A. When the blowtorch is ready to use, the gas is turned on and the flame is lit with a match. The flame has a bright blue cone-shaped centre surrounded by a paler blue flame. The hottest part of the flame is at the tip of the bright blue cone, and this is where the glass is held for melting. Inside this blue cone is an area of unburnt gas which is not as hot and will not melt the glass as quickly. The coolest part of the flame is at the tip of the paler blue flame and the glass is held here for pre-heating and cooling.

Always turn out the flame when you have finished using it—never leave a flame burning unattended.

Holding the glass rods

Glass is a poor heat conductor and the rods can be held about 5cm (2″) away from that part which is in the flame without burning your hands.

For a right-handed person, the main weight of glass is usually supported in the left hand, leaving the right hand free to manipulate the glass or to hold a secondary piece for joining. The left hand is cupped over the glass rod which is supported on the fingertips. The right hand is generally held palm up, and the glass rod is supported by the fingertips (fig.B). By holding the glass rods in this way it is possible to roll them backwards and forwards in the flame so that the glass will melt evenly. When working with very small pieces of glass the hand positions must be modified.

Melting the glass

Glass rods should be rolled backwards and forwards in the flame for even heating. If a rod is held still in the flame, one side will melt quicker than the other. It takes about 30 seconds to a minute for a glass rod to melt sufficiently for moulding. Use the tip of the paler blue flame for pre-heating the glass prior to melting it. It is imperative that the glass should be heated slowly, otherwise the glass will shatter and fragments of hot glass may fly out and cause burns. When the glass has been properly pre-heated and is ready to be melted without cracking it will signal this by causing an orange flare in the blue flame. Move the rod to the hottest part of the flame for melting. Several different techniques are used for moulding the glass.

Attaching glass. One rod can be attached to another by melting one end of each rod and pushing them together in the flame so that they melt into each other. Such things as legs, wings, tails and ears are attached in this way.

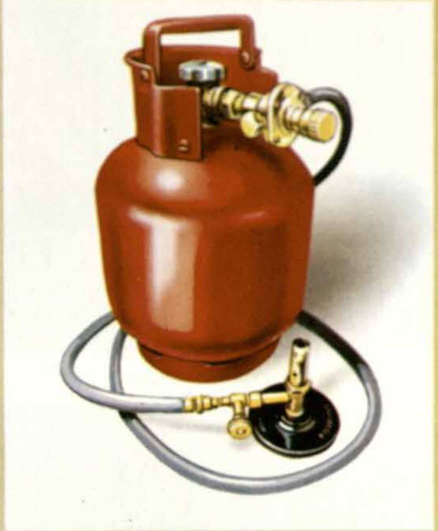
Moulding. To mould a leg, for example, the end of a rod is first attached to the body, then the length of leg is melted and the rod pulled out to the required shape.

Making balls of glass. This can be done by melting the middle of a rod and pushing both ends towards the middle so that a ball of glass forms in the centre of the rod. A ball can be formed at the end of a rod by melting the tip of the rod, turning the rod all the time. The glass will retract into itself to form a ball at the end of the rod.

Cutting. A glass rod can be cut in half by heating and pulling apart. The thin strands of glass left on each separated end can be heated in the flame until they retract into the rest of the rod.

Cooling. To harden rods that have been joined together or a piece that has been moulded, hold glass out of the flame for a few seconds, but never let the object you are working on cool down completely. If you put it down away from the flame for more than a few seconds, you may find that when you put the glass back in the flame it will crack or shatter. To keep the object on which you are working hot but not melting, always hold it in the paler blue part of the flame.

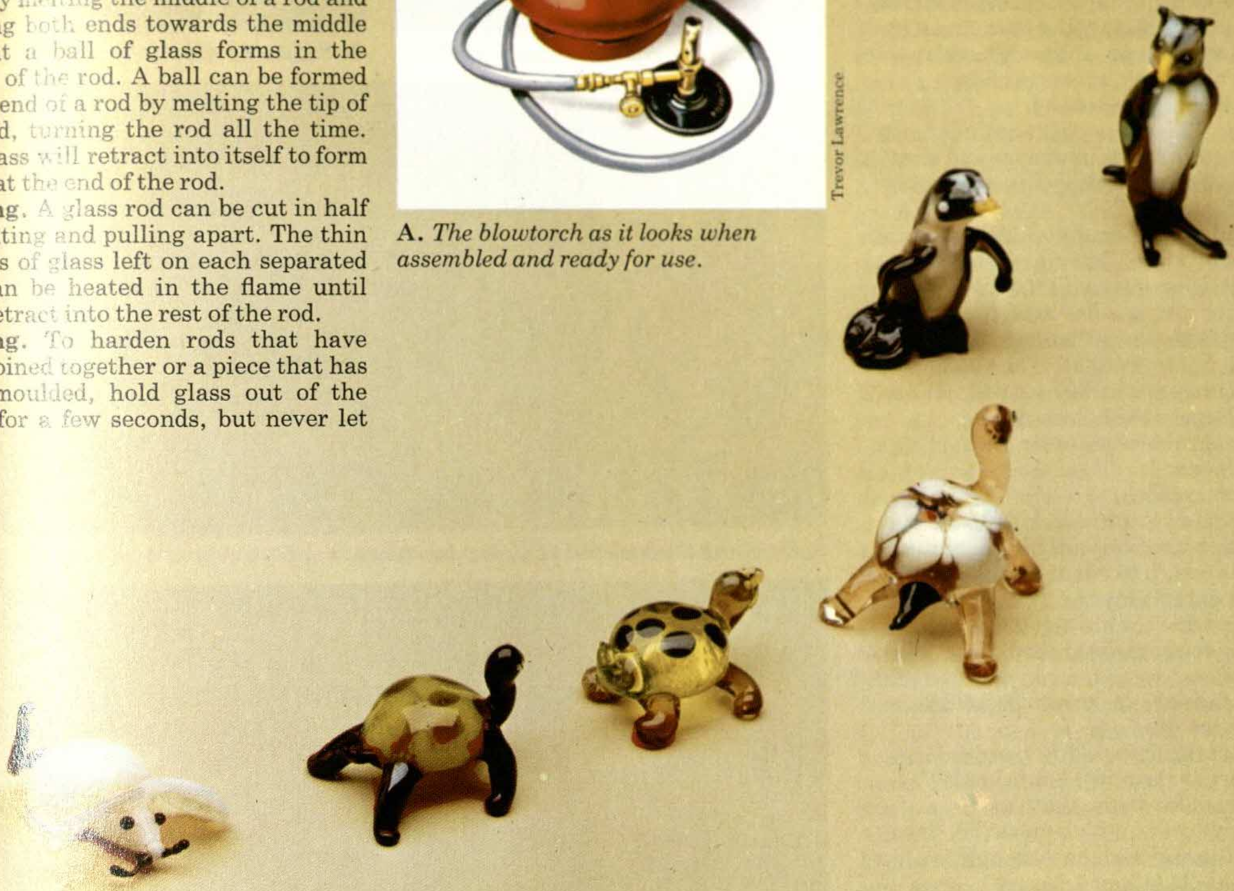
When you have finished your object, do not let it cool down quickly as this will also cause cracking. To prevent this happening, the glass should be cooled as slowly as possible in the coolest part of the flame; ie the tip, gradually withdrawing the glass out of the flame.

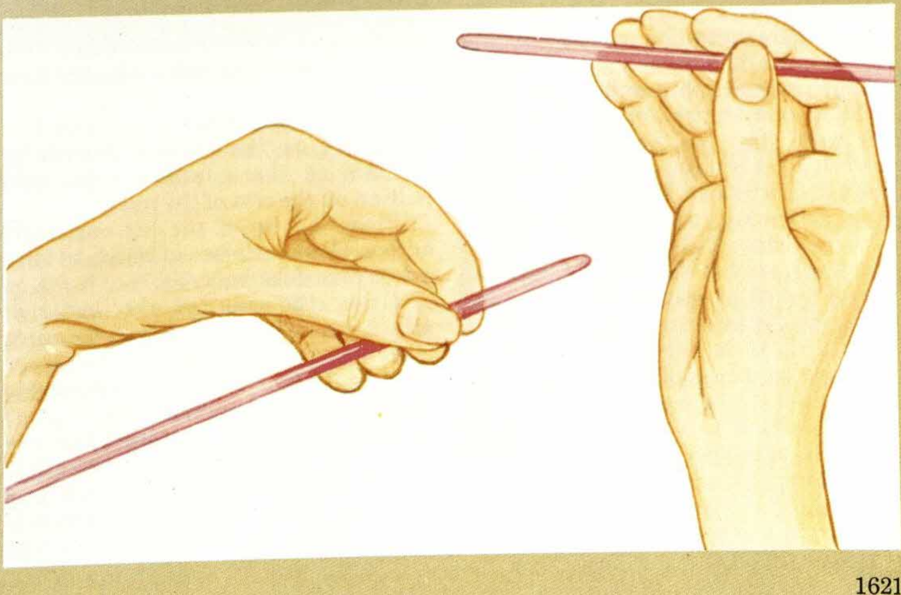


Trevor Lawrence

A. *The blowtorch as it looks when assembled and ready for use.*

Once you have mastered the basic techniques of modelling glass rods you will be able to build up a whole menagerie of glass animals. Here you see some swans, a mouse, three tortoises, a penguin and an owl. Designs by Ron Harvey.





Paul Williams

B. *The glass rods are held lightly, supported on the fingertips, and rolled back and forth in the flame.*

Dachshund

Start with this simple piece which involves attaching and shaping the ears, four legs and the tail of the animal. Once you can make the dachshund successfully, and it will probably take several attempts, you will be able to use this basic shape for any four legged animal.

You will need:

A blowtorch such as the Sievert 2000 (available from any Calor Gas dealer or other large hardware store) with a type 3940 fitting to produce the right sized flame, a type 3045 valve to control the gas pressure, and a length of rubber tubing.

3.9kg (8lb 10oz) propane cylinder.

Tweezers of various shapes and sizes to pull and shape the glass while it is hot.

A block of carbon about 10cm x 10cm x 2.5cm (4"x 4"x 1") or a piece of brass 10cm x 10cm x 6mm (4"x 4"x ¼"). This is used for giving a flat base, for example, to the feet of an animal while the glass is still hot and pliable. Carbon or brass is used for this as it will not burn or adhere to the hot glass.

A metal rack or glass jar for holding hot glass rods.

Box of matches.

A sheet of asbestos such as Marinite board or Uralite—not blue asbestos—large enough to cover working surface, about 1m (3') square, or a sheet of kitchen foil about 1.5m (4'6") square and a piece of wood board 1m (3') square.

A pair of dark glasses to protect your eyes from the flame.

Materials. Two yellow transparent glass rods 15cm (6") long, 6mm (¼") diameter for body and legs.

One transparent blue glass rod, 6mm (¼") diameter and long enough to serve as a handle (about 7.5cm (3") long).

Miscellaneous pieces of coloured rod for eyes, nose, ears etc.

☐ Assemble tools and materials on asbestos mat or kitchen foil wrapped around a piece of wood.

☐ Put on dark glasses.

☐ Turn on and light torch.

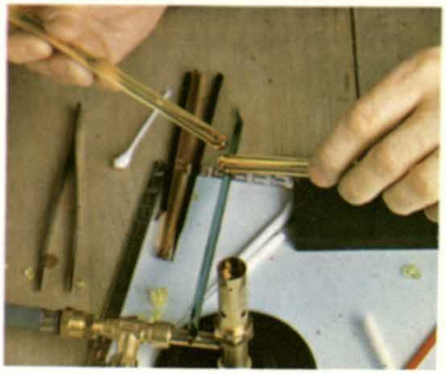
☐ Hold one transparent rod in your left hand (this will be the body) and the other transparent rod in your right hand (this will form the legs).

☐ Heat the tip of the left-hand rod over the flame until it starts to melt.

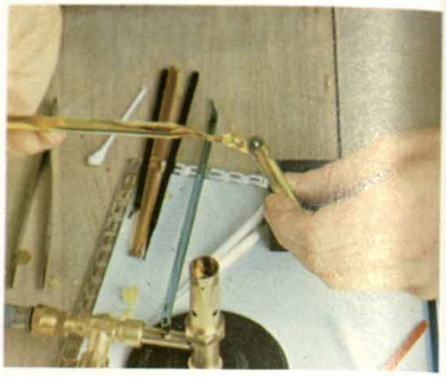
☐ Then heat the tip of the right-hand rod in the flame keeping the left-hand rod warm, but not melting, by holding it in the tip of the flame (fig.1).

☐ When the tip of the right-hand rod has melted to the consistency of thick treacle, join it to the end of the left-hand rod slightly to one side.

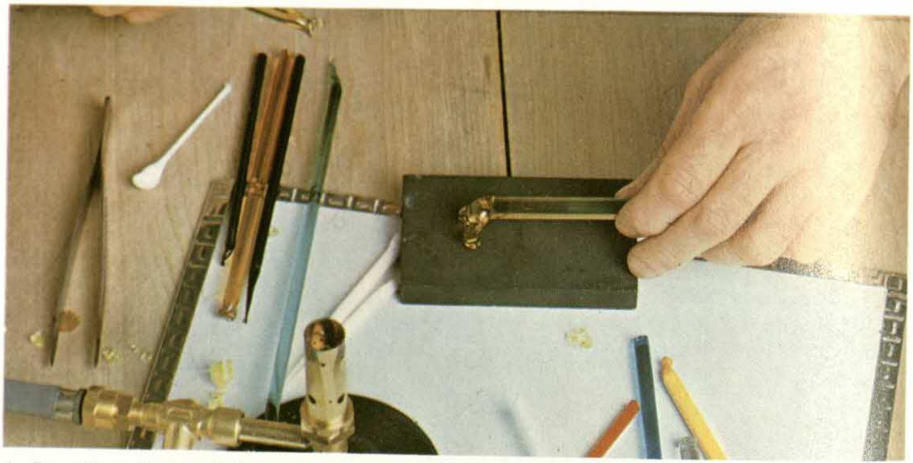
☐ Pull out and shape leg as in fig.2—if the glass is too soft the leg will be too thin. Try to get the glass hot enough to mould but not to run.



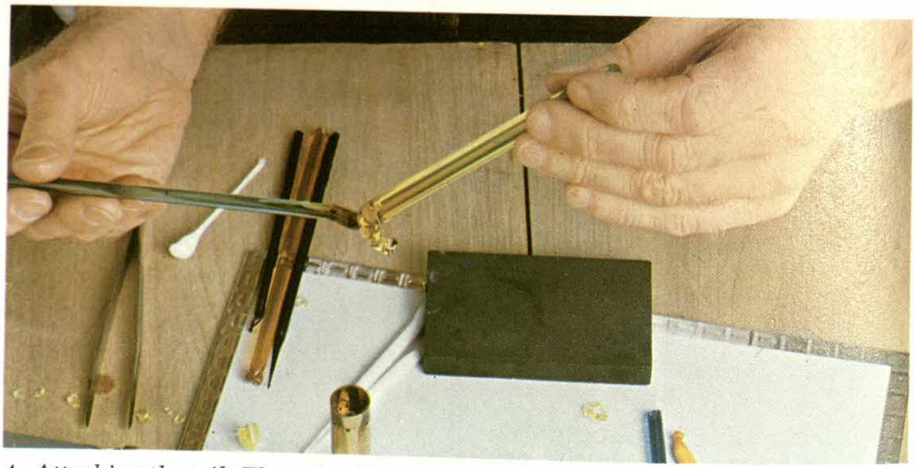
1. *Heating the ends of the rods.*



2. *Shaping one back leg.*



3. *Levelling the back feet on the carbon block.*



4. *Attaching the tail. The animal is then turned round and held by the tail.*

☐ Cut leg to the required length by heating at the required point and pulling off the rest of the rod.

☐ Press the tip of the leg on to the carbon block, or piece of brass, to form a foot with a flat base (fig.3).

☐ Using the rest of the leg rod, attach the other back leg in the same way.

☐ Heat the end of the transparent blue rod and attach to animal (fig.4).

☐ Pull the rod to stretch it out and hold away from the flame for a few seconds until it hardens—this will form the tail. The rest of the rod attached to the tail will serve as a handle while the animal is being modelled.

☐ Turn the animal around and hold in the left hand by the tail (blue rod).

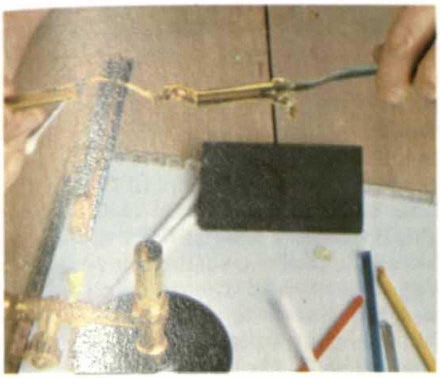
☐ Heat the body at a point about 5cm (2") from the base of the tail and kink glass to form neck.

☐ Draw off the body glass to a taper to form the head and pull off the rest of the rod (fig.5).

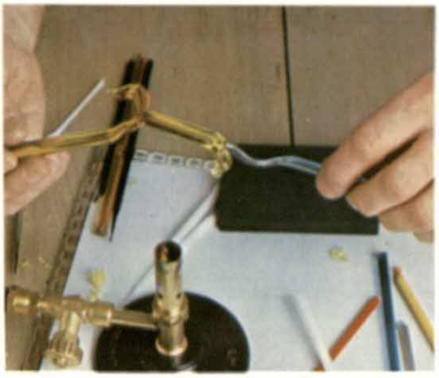
☐ Using the remainder of the rod that formed the back legs, attach the front legs in the same way as the back legs, shaping them as shown in fig.6.

You have now made the main body of the dachshund. Next attach ears, eyes and nose.

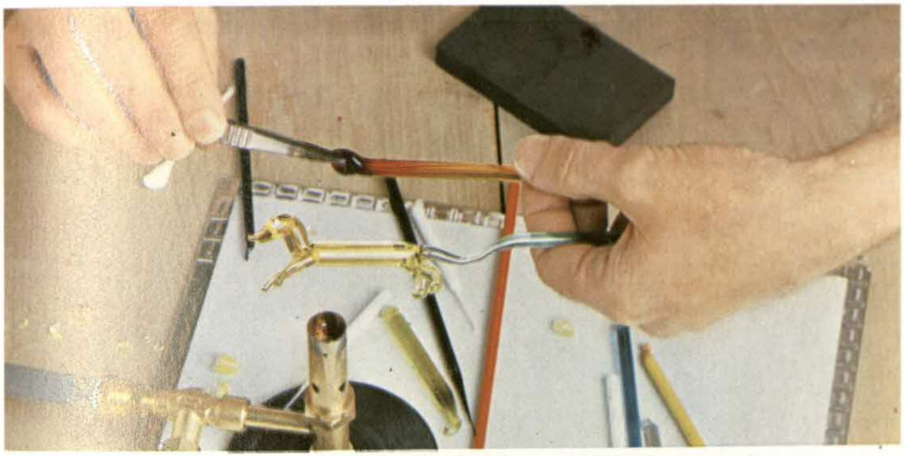
Nose. Heat up the end of a red or



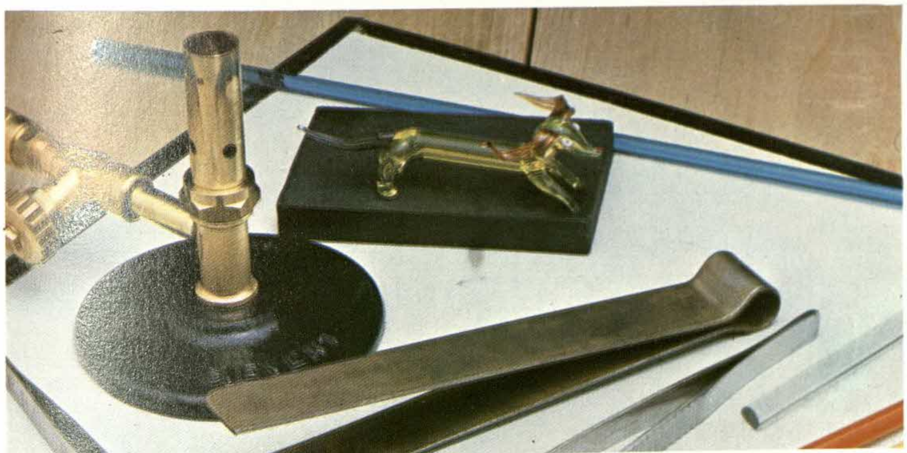
5. *Tapering the glass to form head.*



6. *Shaping one of the front legs.*



7. *Keeping the dachshund hot while shaping the end of the brown rod.*



8. *Finished dachshund, carbon block, asbestos mat, glass rods and blowtorch.*

Jerry Tubby

brown rod and attach a small blob to the end of the nose.

Eyes. Heat up an opaque white rod and attach two small dots for the eyes.

☐ Heat end of black rod and put two small dots in the middle of the white dots.

Ears. Heat about 6mm ($\frac{1}{4}$") of the end of the brown glass rod and flatten with tweezers (fig.7).

☐ Heat the tip of flattened area and melt into one side of the head.

☐ Heat the attached ear in the flame and let it flop to the required shape.

☐ Heat ear with a small flame at the point where the ear should end and pull off excess.

☐ Using the same brown rod, attach other ear to complete animal (fig.8). Gradually remove animal from flame.

Swan

The basic shape of the swan can be modified to make other birds or to form one of the swans on page 1620.

You will need:

Tools as for the dachshund.

Materials

Opaque white glass rod 13cm (5") long, 6mm ($\frac{1}{4}$") diameter.

Opaque black glass rod 7.5cm (3") long, 3mm ($\frac{1}{8}$") diameter.

Yellow glass rod 7.5cm (3") long, 3mm ($\frac{1}{8}$") diameter.

☐ Place asbestos mat or kitchen foil wrapped around a piece of wood on a flat surface, and lay out tools.

☐ Put on dark glasses.

☐ Turn on and light torch.

☐ Take white glass rod and hold at both ends, one end in each hand.

☐ Heat a section 1.25cm ($\frac{1}{2}$") long, about 5cm (2") from left end. As the glass softens use both hands to push the ends of the rod inwards to form a ball in the centre of the rod. This will be the body of the swan.

☐ Press the ball against the carbon block, or piece of brass, to give the swan a flat base.

☐ Next, heat the rod along about 1.25cm ($\frac{1}{2}$") directly to the right of the ball.

☐ When soft pull gently and bend into an S-shaped neck. You will find that when you pull out the soft glass it will stretch and become thinner.

☐ Separate rod from end of neck as described earlier.

☐ Heat the end of the neck to form ball-shaped head.

Eyes. Heat the end of opaque black rod and attach two small specks of black glass to the face for the eyes. Hold in the flame until any strands of glass attached to the eyes disappear.

Beak. Heat the end of the yellow rod and the head of the swan and attach yellow rod to head.

☐ Pull out yellow rod to form beak and separate rest of yellow rod from beak.

Wings. Heat the end of the opaque white rod (the piece that was pulled off from the head) and flatten about 6mm ($\frac{1}{4}$") of the end of the rod with the brass tweezers. If the rest of the swan cools down while forming the wing, pre-heat in tip of flame before attaching wing.

☐ Melt flattened end of rod into one side of the swan and pull out to form a wing.

☐ Separate rest of rod from the wing and form other wing in the same way.

The tail is formed by heating the tail end of the swan and pulling off the rod leaving a pointed tail.

☐ Gradually remove finished animal from the flame.

Warning. Wear thick protective clothing in case any hot pieces of glass should fall on you.

Keep hot glass rods together and do not pick up a rod that has just been in the flame—it takes some time to cool down completely.

Do not work without dark glasses as the brightness of the flame could damage your eyes.

Work in a well-ventilated room.

Do not use blue asbestos for the working surface.

INSTITUTE OF EDUCATION FOR WOMEN
Deptt of Extension Services

The proportions of the face

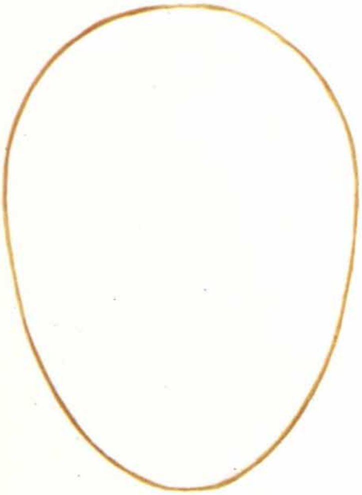
Design know-how 58

This chapter shows you the proportions of the face. You will want to know how to draw faces for any representation you make of a face, in collage, painting, embroidery or sculpture.

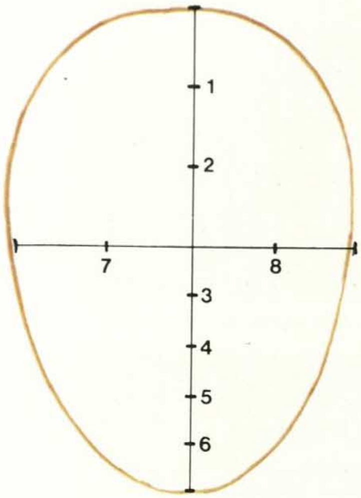
No two faces are ever exactly alike, all have their own individual characteristics, yet all conform to a greater or lesser degree to the same basic proportions. It is possible to draw a face by plotting the features according to these basic proportions.

Drawing a face

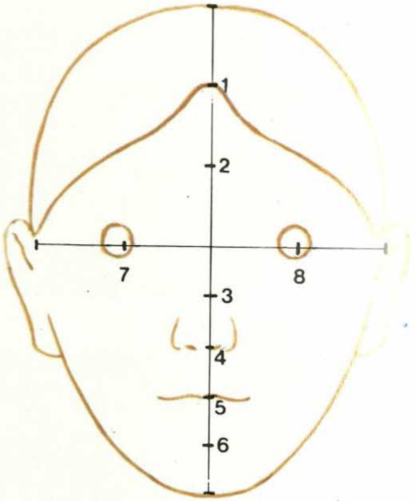
Draw an egg shape with the pointed end for the chin (fig.1).
Divide the egg shape equally vertically and horizontally; divide each side of the horizontal line in half; divide the bottom half of the vertical line into five equal parts and the top half of the vertical line into three equal parts. Number the marks as shown (fig.2).
Place the eyeballs on points 7 and 8. Place the nose on point 4, and the mouth on point 5. Draw the ears with the tips of the ear lobes level with the nose (fig.3).



1. *First draw an egg shape.*



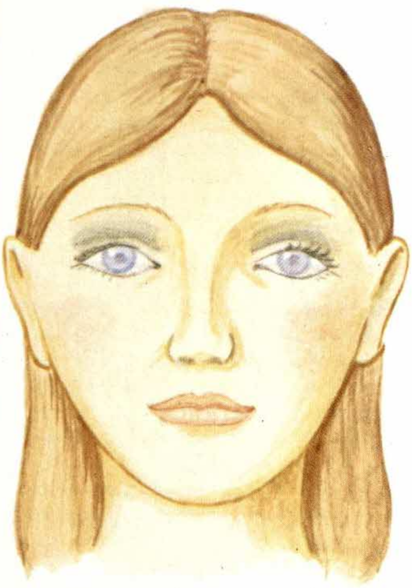
2. *Divide it into sections.*



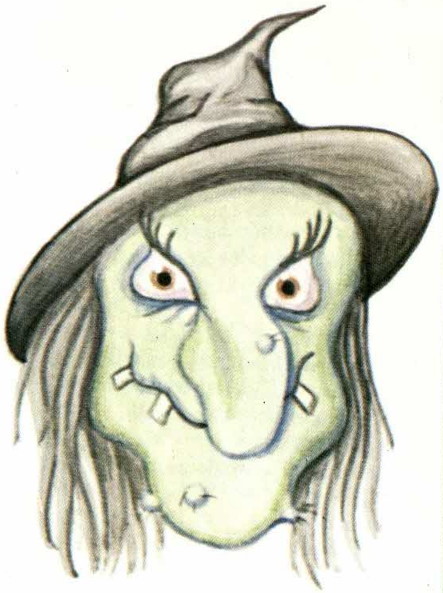
3. *Plot out the features.*

The hairline will come one third down the top half of the vertical line on point 1 (fig.3). You have now plotted out the features on the egg shape and can draw a classically proportioned face as shown in fig.4. The individual character in a face is created by the difference in features, and the expression of the face.

Changing the proportions. If you follow these instructions you will draw a classically proportioned, even-featured face. Not all faces conform exactly to these proportions, however. Some people have high foreheads, long noses or small chins, for example, and in these cases do not follow the classic proportions completely. So when drawing a particular character you may want to change the proportions slightly. To make a really ugly or frightening face such as a witch's face, the proportions will have to be altered quite drastically and the features distorted in order to produce the required effect (fig.5).



4. *Complete the drawing.*



5. *Change proportions for effect.*

Paul Williams

Creative ideas 58

Patchwork oven gloves

Few things are as annoying as trying to grip a hot pan firmly using a small padded square without burning yourself — these gloves are a pretty solution.

You will need:

Scraps of cotton fabric for patchwork.

45cm (18″) plain cotton fabric for lining.

45cm (18″) of 110gm (4oz) polyester wadding.

90cm (36″) cotton binding.

Matching sewing thread.

Old newspaper for pattern.

To make up. Make the pattern by drawing round your hand on the newspaper. Add 3cm ($1\frac{1}{4}$″) all round for seams and cut out the pattern.

Fold lining fabric in half and cut out glove pattern twice.

Cut four glove pieces from the wadding.

Make a piece of cut and stagger patchwork (see Patchwork chapter 1, page 154) to measure 86cm x 30cm (34″x 12″). Cut out glove pattern in doubled fabric as for lining.

Open out lining pieces so that you have two left-hand and two right-hand pieces. Tack wadding to each piece and then stitch together in pairs of left and right with the unpadded sides together and taking 15mm ($\frac{5}{8}$″) seams. Trim wadding from seam allowance. Clip round the curves and inside thumb.

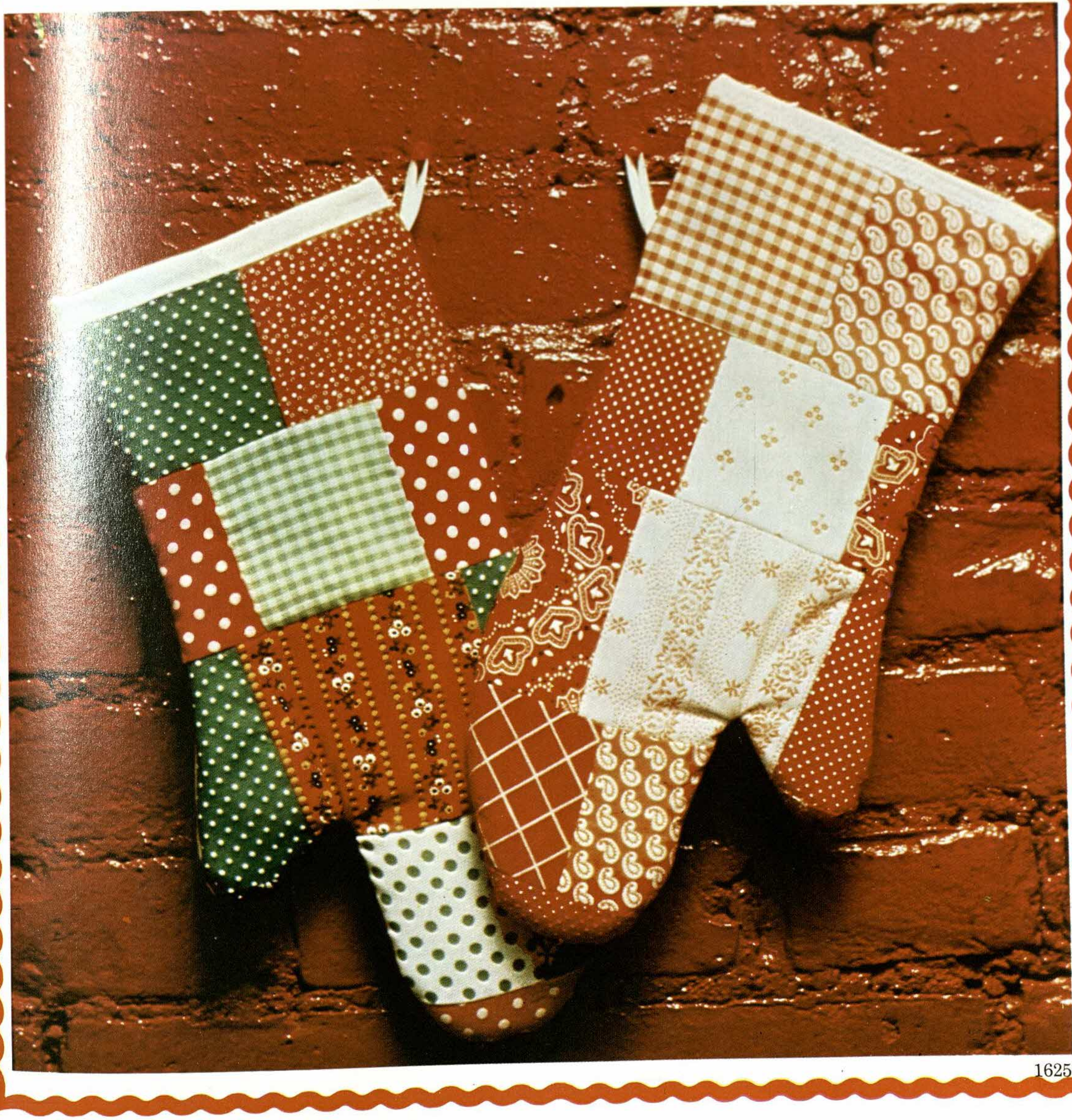
Make loops for hanging the gloves by folding a small length of binding in half, then tack it to the right side of one patchwork piece, raw edges together. Repeat for other glove.

With right sides together, stitch each pair of patchwork pieces together taking 10mm ($\frac{3}{8}$″) seams.

Clip round the curves and turn to right side.

Slip wadded lining into the patchwork gloves, wrong sides together, and tack the wrist edges together.

Finally, fold binding over raw edges and stitch in place.



Decorations with Japanese papers

Japanese hand-made art papers are among the most beautiful made today. They range from fibrous textured papers with strong, natural colours, to the most fragile 'lacy' papers which look like delicate lace. The papers are made either from wood pulp or cotton fibres and are therefore of a high quality. Japanese craftsmen guard the secret of the lacy paper formula so that this paper is relatively rare.

Sometimes extra fibres, dried leaves and flowers, pieces of gold leaf and butterflies are embedded in the pulp. These are usually translucent and are shown to best advantage when light shows through them, as in mobiles, screens, lampshades and window decorations. Some papers have such wonderful variations in fibre colours that definite designs such as apples, fish and dragons can be identified in the fibre dyes.

These papers can be bought from specialist art shops and some handicraft shops and stationers. They are sold by the sheet—measuring about 1m by 65cm (39″x 26″). As they are often quite fragile they should be stored flat or carefully rolled between protective layers of other paper to prevent tearing or creasing. If creases occur, iron gently with a cool iron.

As you might imagine, the names of the various Japanese papers are as exotic as the papers themselves—the lily candle holder was made with Koto Buki, and the mobile with natural Ogura. Other lacy types include Rakasi Hana-Asa and Rakasui, while a simple brown textured paper is called Sugi Kawa.

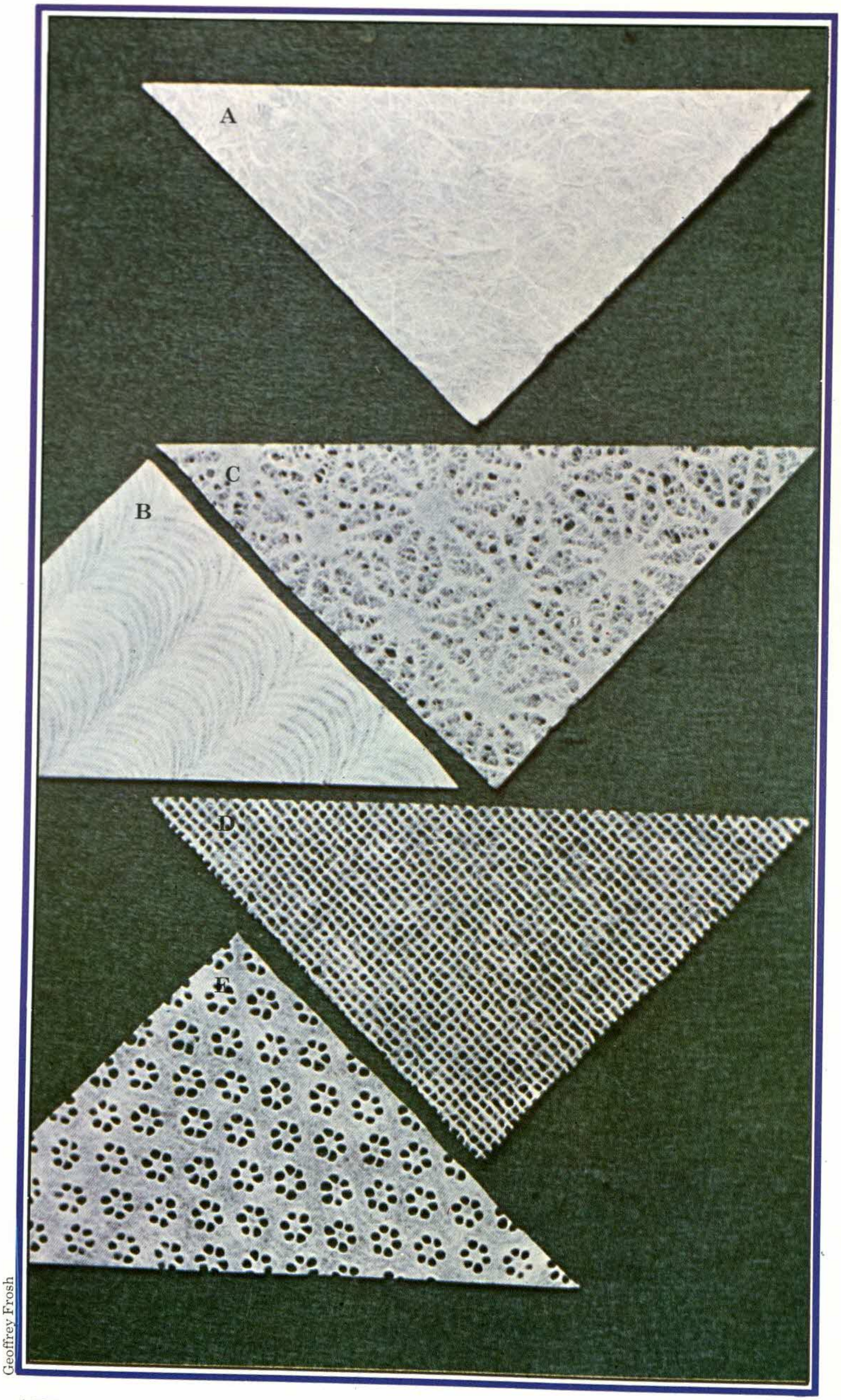
Making a mobile

A disc mobile is an excellent first project for using Japanese hand-made papers. It is quite simple to make and shows off the full beauty of the paper.

You will need:

1 sheet white Japanese paper such as Ogura.
1 sheet coloured Japanese paper such as Sugi Kawa.
2 strips natural wood shavings.
A piece of bamboo about 30cm (12″) long.
8.5kg (19 lb) nylon fishing line, 2m (6′) long.
A piece of string, about 60cm (24″) long.
Clear adhesive, such as UHU.
Paperclips, ruler.
A darning needle.
Stanley knife or a pair of scissors.

Strips of wood shavings, natural or coloured—usually about 4cm ($1\frac{1}{2}$″) wide and 80cm (31″) long—can be bought from many craft and DIY shops.



Geoffrey Frosh

Left: some samples of Japanese paper. **A.** *Yamato Chiri;* **B.** *'Scallops';* **C.** *'Stars';* **D.** *'Net';* **E.** *'Daisies'.*

Bamboo is available from the same sources, and reels of nylon fishing line can be bought from sports shops and some handicraft shops.

☐ Soak the wood shavings in water for about 30-40 minutes or until quite supple.

☐ Using a Stanley knife against a ruler, cut the shavings into strips of varying lengths—from about 10cm-30cm (4″-12″) but about 2cm (¾″) wide in every case. The mobile in the photograph is made up of 26 circles, although of course you can make as many as you like.

☐ Curve each strip into a ring. Secure each overlap seam with a paperclip, lay it on its rim and leave to dry.

☐ Remove the paperclips and stick the seam of each wood shaving ring with adhesive.

☐ Using the point of a darning needle make small holes on opposite sides of each ring. The holes should be just large enough to be able to thread the fishing line easily.

☐ Place blotting paper or old newspapers on a firm flat surface and place a sheet of the Japanese paper on top.

☐ Spread a little adhesive along one rim of each wood shaving ring and stick down on to the Japanese paper. Place the rings close enough to each other to avoid wasting too much paper. Allow sufficient space between them to enable you to cut them out easily afterwards.

☐ When the adhesive is thoroughly dry, cut away surplus paper with small scissors so that the paper discs fit the rings exactly.

☐ Cut the fishing line into four pieces of differing or equal length according to your taste.

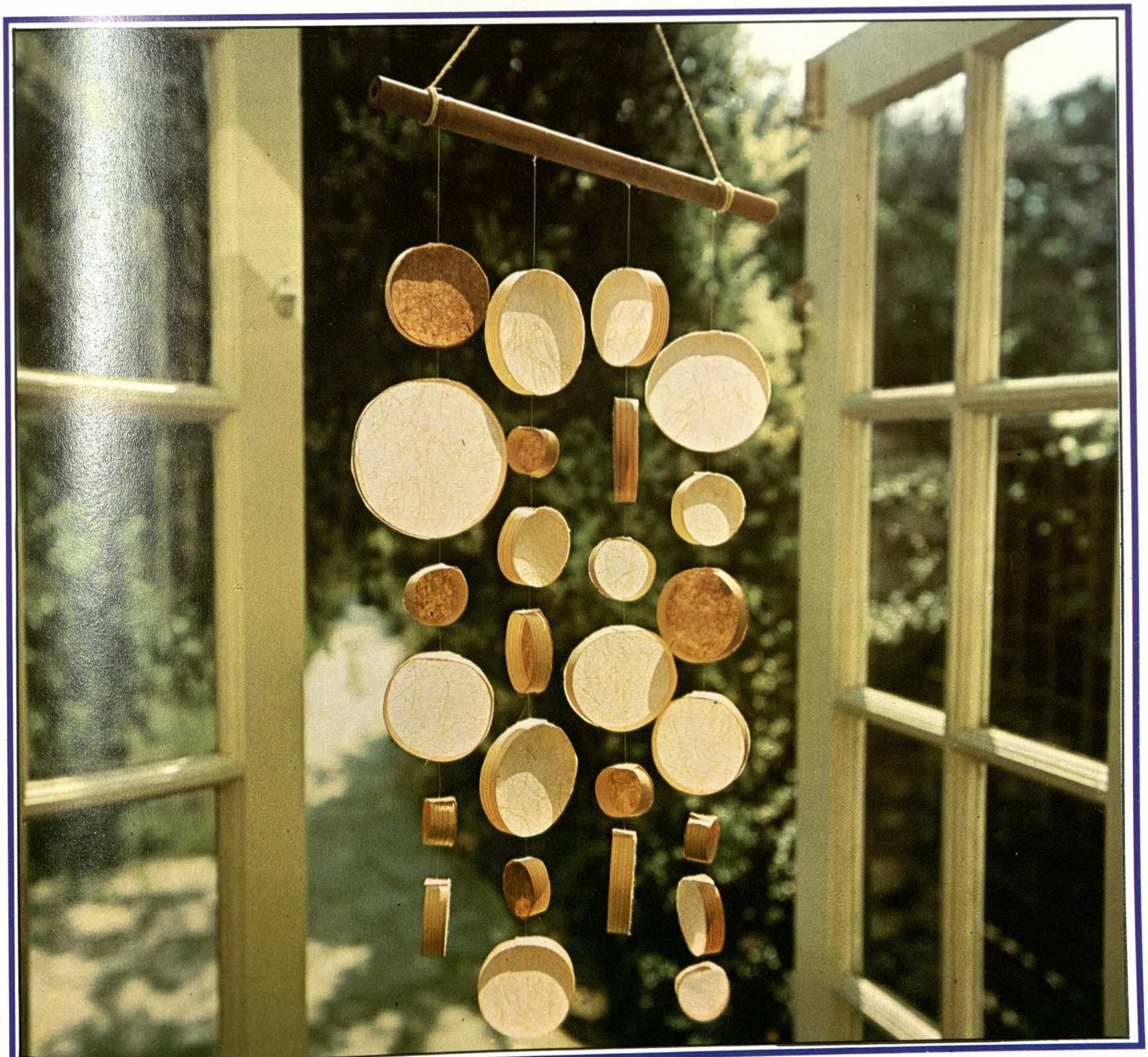
☐ Tie a knot at the end of one piece of fishing line. Put a tiny dab of glue on the knot. Thread one of the discs on to the line and push it down gently until the wood shaving rests against the knot.

☐ Thread the remaining discs on to the fishing line, placing them at intervals and in colour patterns of your choice. Always stick the discs on to glued knots.

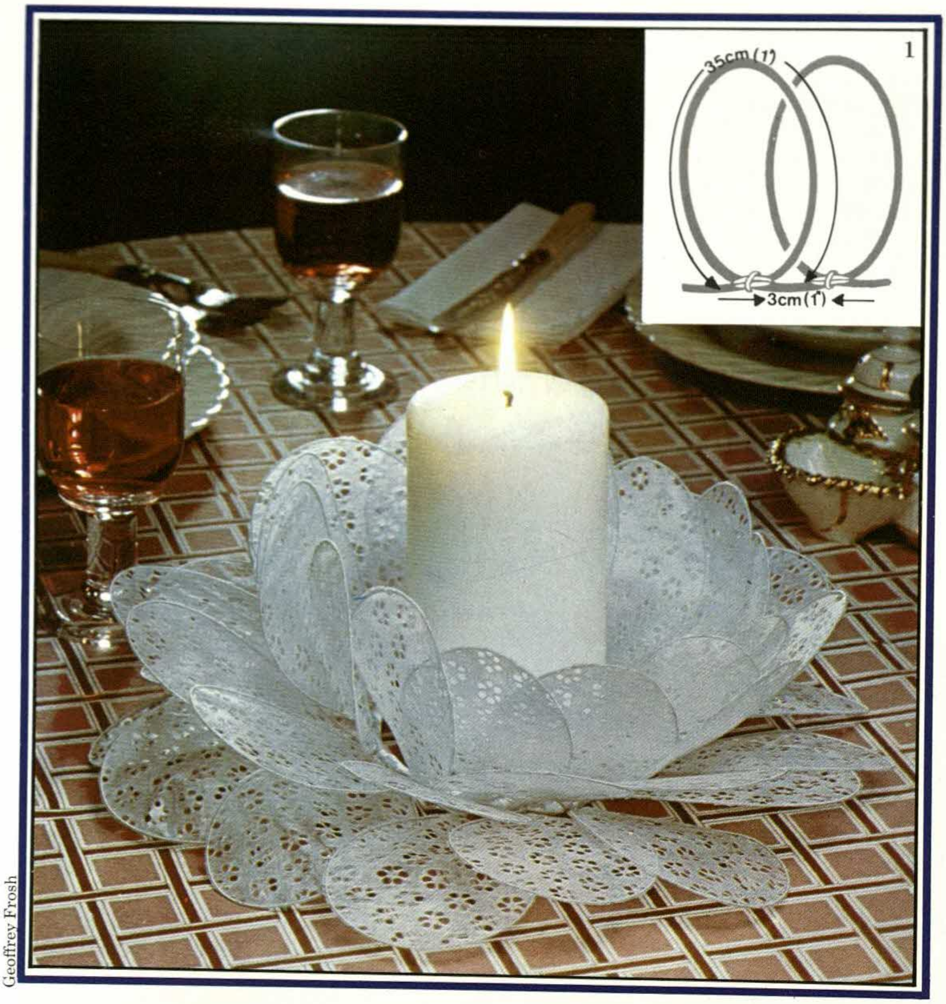
☐ Tie the loose end of each piece of fishing line on the bamboo, again securing the knots with adhesive.

☐ Tie ends of string to each end of bamboo stick, tie and hang up in a light place.

A disc mobile shows off the airy quality of Japanese paper; its place in a window where the light shows through it accentuates its translucency.



Geoffrey Frosh



Geoffrey Frosh

Water-lily candle holder

Milliner's wire is another material which makes an excellent frame to support delicate light-weight papers and this decorative candle holder is not difficult to make. For safety's sake, however, it is essential that—either before or after making up—the paper is sprayed with flameproofing spray.

Milliner's wire can be bought from haberdashery shops and binding wire from florists and some craft shops.

You will need:

1 sheet Japanese lacy paper.

1 roll milliner's wire, about 14m (15yd) long.

Binding wire.

Wire cutters or combination pliers.

Clear adhesive, such as UHU.

Flameproofing aerosol spray.

☐ Unwind about 35cm (1′) of milliner's wire. Curve the wire so that the loose end touches the 35cm (1′) mark and cross the wires at this point to make a loop.

☐ Secure the loop with a twist of binding wire but do not cut the milliner's wire.

☐ Unwind another 2.5cm (1″) of milliner's wire before making a second loop the same way and the same size as before (fig.1). Secure the loop with binding wire as before.

☐ Continue making loops at regular intervals the whole length of the milliner's wire without ever cutting it, and securing each loop with a short length of binding wire.

☐ Cut the paper to the approximate shape of the loops.

☐ Spread a little adhesive around one rim of each loop and stick the paper to it.

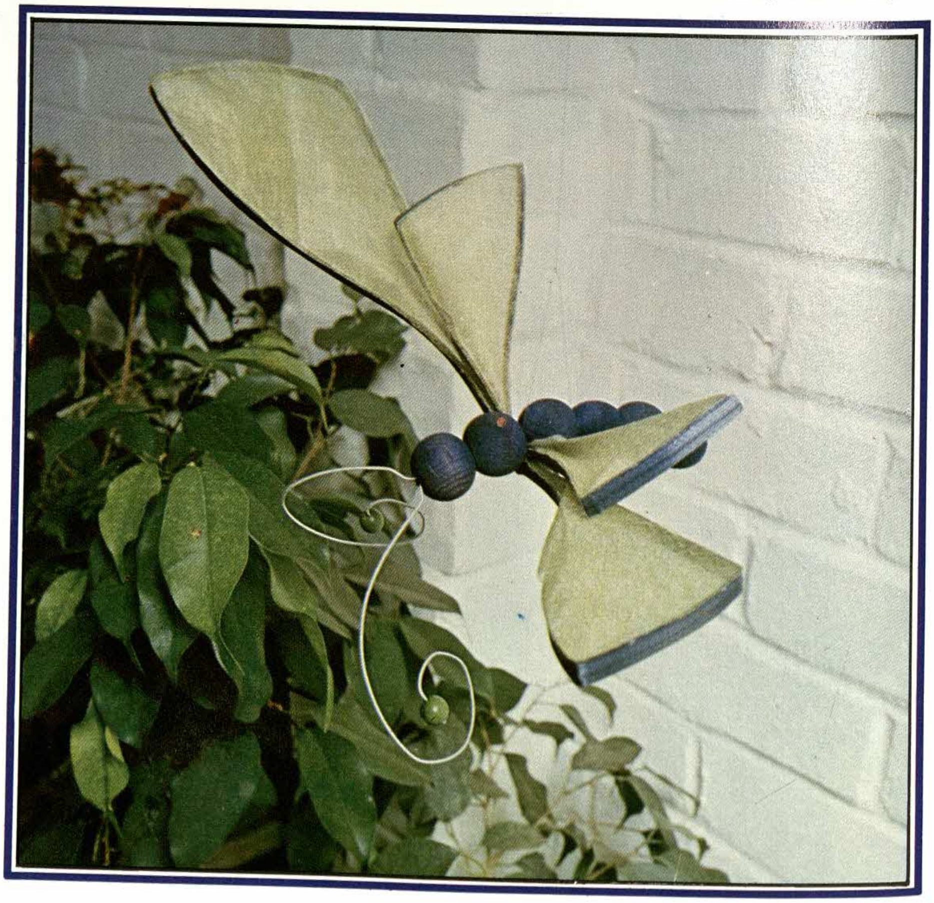
☐ When completely dry, trim the paper neatly to size. Spray the paper with flameproofing spray.

☐ At this stage the loops are still loose and the next process is to straighten them.

Coax the strip into a spiral allowing ample space in the centre to stand the candle.

☐ Use binding wire to secure the spiral in two or three places and use your hands to gently cup the flower petals into a pretty shape. The number of turns in the spiral will of course depend on the size of candle used. A fat candle, as shown in the photograph, standing alone or on a saucer of the same diameter will be encircled by three layers of petals—a total of about forty petals.

Left: a water-lily candle holder makes an elegant table decoration. Below: dragonfly mobile uses woodshaving frames to display Japanese paper wings. Doubled milliner's wire was used to thread the wooden beads for the body.



Butterfly lampshade

Artificial light is also very effective for showing off the special qualities of Japanese papers, and the iridescent colours of butterflies' wings glow prettily at night in this lampshade. Choose a very low watt (not more than 60w), pearlized bulb and a simple lamp base which does not overpower or distract the eye from the delicate tracery of the paper shade.

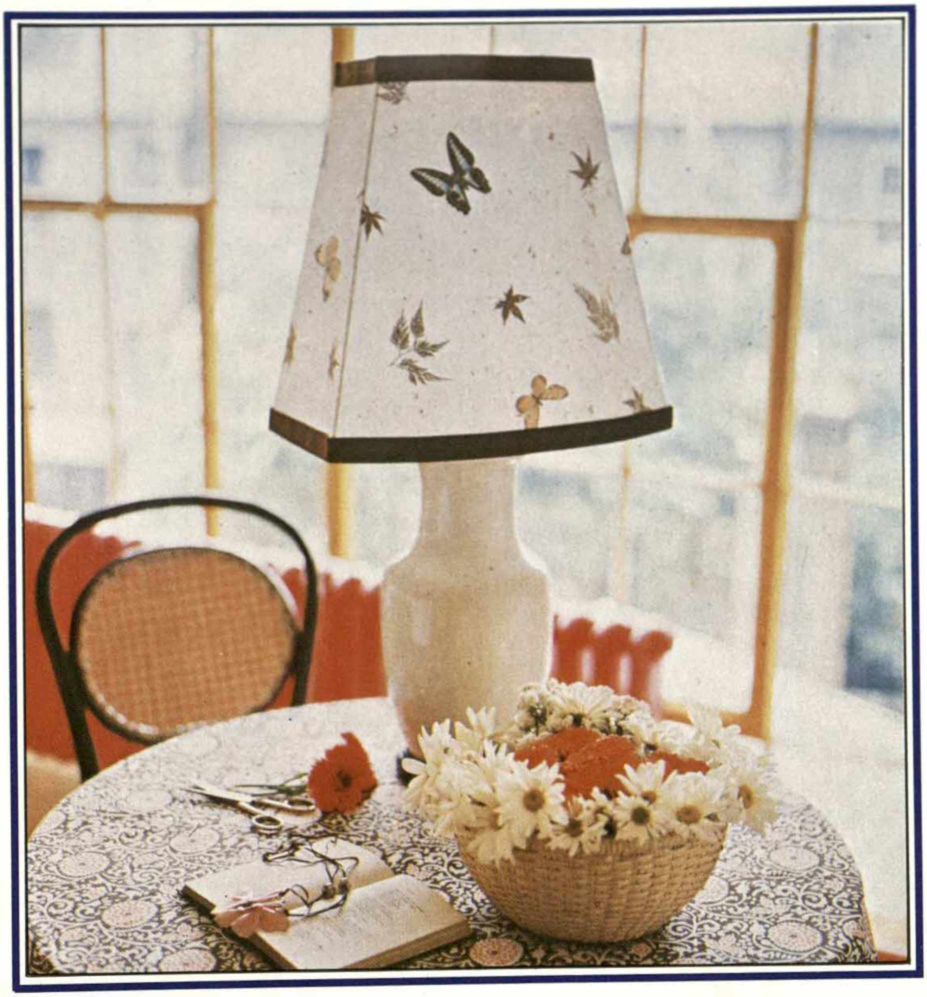
You will need:

1 sheet Japanese lacy paper, preferably embedded with butterflies or dried flowers.
A straight-sided lampshade frame with four panels.
Scissors, pencil and ruler.
Newspaper or other rough paper.
White enamel paint and brush.
Clear adhesive, such as UHU.
Velvet ribbon long enough to go round the top and bottom rings allowing for seam overlaps.

☐ Paint the lampshade frame with the gloss paint and leave to dry. (If the frame is already white this is, of course, unnecessary.)

☐ Measure the four oblong panels that go to make up the lampshade frame and cut a pattern for each in newspaper or other rough paper. (See Paper chapter 34, page 1292.)

Right: this lampshade is made of Japanese paper with leaves and butterflies embedded in it. Below: stylized bouquet has lacy paper petals, made in the same way as those for the candle holder; leaves are textured paper.



Tony Page

Geoffrey Frosh

☐ Hold them against the lampshade frame to test for accuracy, then use as templates to cut out your Japanese paper. Cut on the generous side to avoid the possibility of any unsightly gaps at the side struts. A small overlap of paper panels is a good idea and you will need a little extra length for pulling taut. Any real surplus can be trimmed to size once the paper is stuck to the frame.

☐ Spread a thin line of glue down the two side struts and those parts of the top and bottom ring that go to make up one panel.

☐ Carefully position the appropriate piece of Japanese paper and stick it on the frame. Attach at the top first, then the sides, gently pulling the sheet taut from the bottom, and finally affixing the bottom.

☐ Trim off surplus, and repeat the process for the remaining three panels of the lampshade.

☐ When quite dry, spread a thin band of adhesive on the outside of the paper shade close to the top ring of the frame and gently press the velvet ribbon trim into position; similarly attach ribbon to the bottom of the shade.

Drawn thread embroidery

Yarn — embroidery 11

Drawn thread work is a method of creating a lacy fabric from a plain one by withdrawing threads in a band across the fabric and grouping the remaining threads in the band by simple stitchery. It is mainly used for decorative borders and panels for table and bed linen but it can also be worked successfully on curtains, lampshades and, if the fabric is suitable, on dresses and shirts.

Fabric. The most important consideration when choosing fabric for drawn thread work is that it should be an evenweave with threads which are easily counted and withdrawn. Linen is a traditional choice because it is hard wearing but some cottons and synthetics are also suitable.

Threads. Threads for this type of embroidery should be strong and hard wearing and in the same colour and fibre as the fabric. They should be slightly heavier than the fabric threads for decorative stitchery and finer for hemstitching.

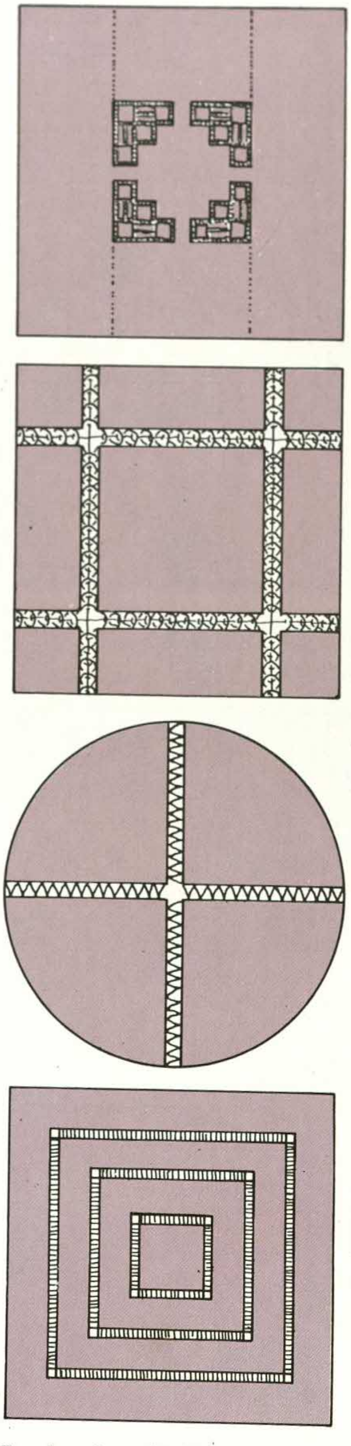
Needles. Tapestry needles of appropriate size for the embroidery thread should always be used because their rounded points separate fabric threads easily.

Designing

Drawn thread work is one of the simplest types of embroidery design. Because the whole process depends on the removal of bands of the fabric's threads, the technique lends itself to borders, insertions and panels. The outer edge of a border is often placed along the stitching line of a hem so that the decorative stitchery can secure the hem at the same time. On a large item such as a tablecloth, you might like to add one or two more borders in squares towards the middle of the cloth so that they fall on the table top (fig.1).

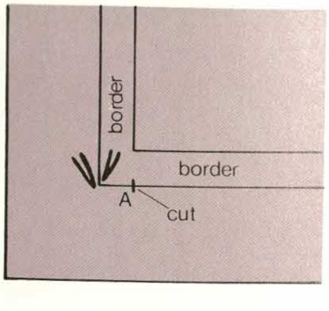
Because the drawing of threads weakens fabric, borders on clothes should be positioned in areas not subject to strain (fig.2).

Borders can be of any width you choose, although for wider borders and panels—about 2.5cm (1″) or more—it is usually advisable to leave three or four threads at intervals across it to prevent the fabric from becoming too weak.



1. *Borders for table linen.*

2. *Insertions for clothes.*



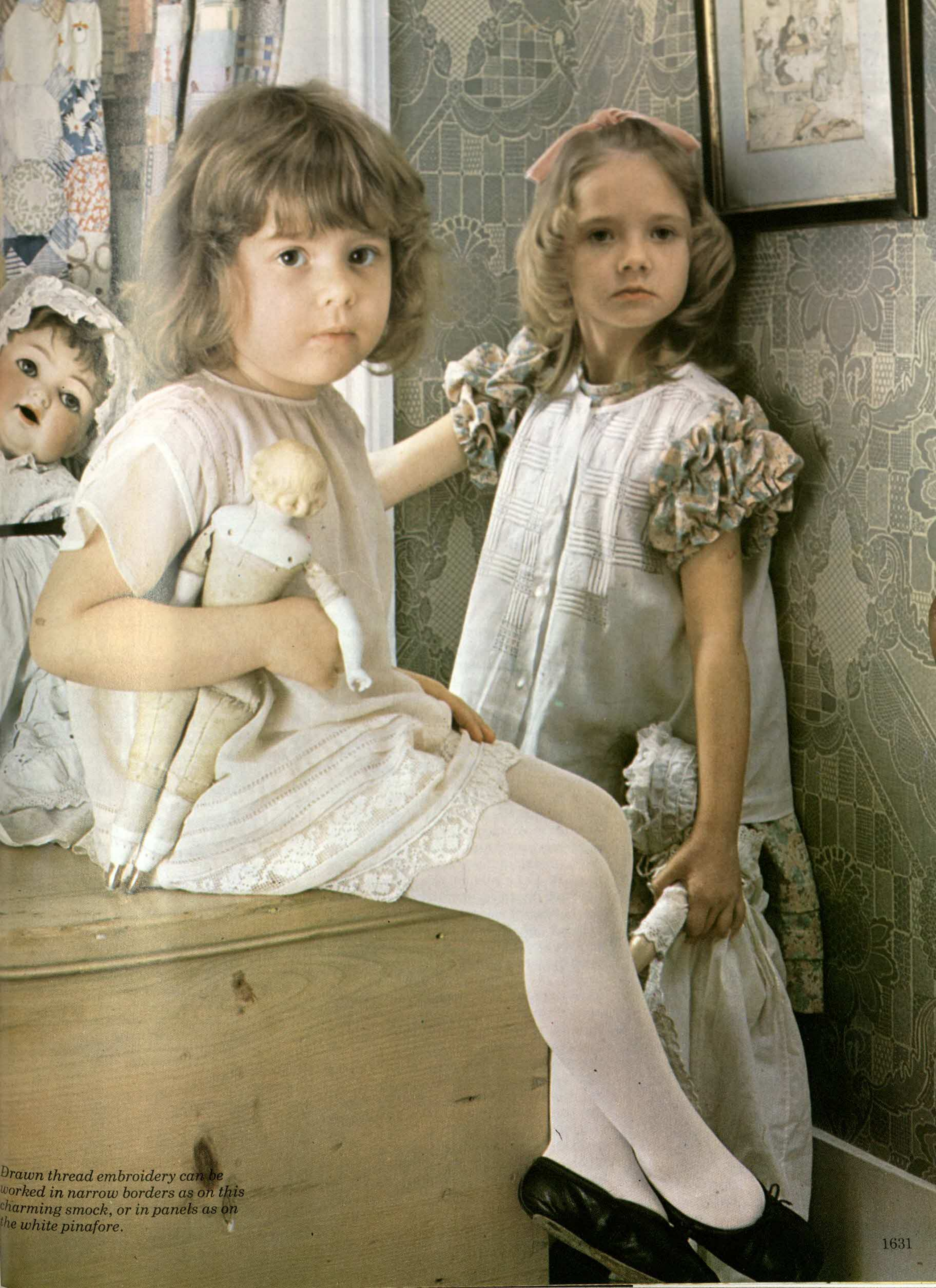
3. *Position of first cut thread.*

Coral Mula
Jerry Tubby

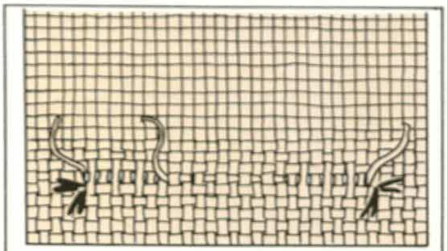
Withdrawing threads

Decide on the width of the border and mark the position accurately on the fabric. On square borders mark each outside corner where adjacent sides meet with a pin or tailor's tack (fig.3). If you are intending to secure the hem with the border stitchery, decide on the finished depth of the hem, double this and add the depth of the first turning. Mark this overall measurement from the edge of the fabric to indicate the outside edge of the border.

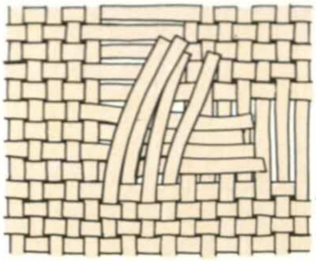
☐ Cut the thread lying along the outside edge of the border 2.5cm (1″) away from the marked point of the corner (fig.3, point A) at both ends.



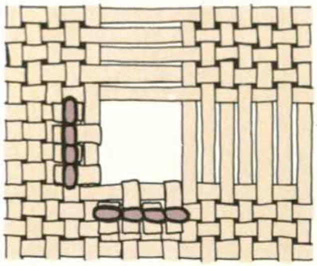
Drawn thread embroidery can be worked in narrow borders as on this charming smock, or in panels as on the white pinafore.



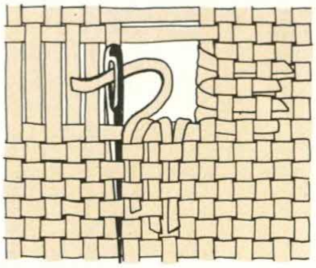
4. *Withdrawing the cut ends.*



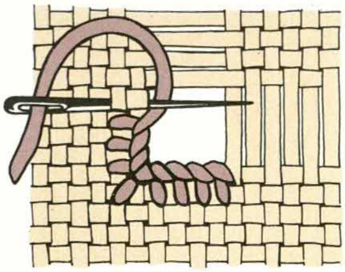
5. *The whole border withdrawn.*



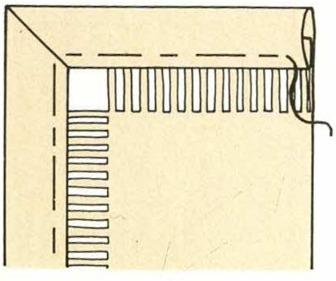
6. *Back stitching at corners.*



7. *Darning back at corners.*



8. *Buttonholing at corners.*



9. *Completing the hem.*

Pull out each cut end with the point of a needle as far as the marked point and leave hanging (see fig.4). Pull out the remaining portion of thread between the cut points completely. Continue to withdraw threads in this way for the required depth (fig.5) all round the border.

☐ Where the border lies level with the stitching line of the hem, the strongest and tidiest way of securing the loose threads at the corners is to turn them back into the hem and secure them with tiny back stitches which will be hidden when the hem is turned up (fig.6).

On borders which fall in the main area of fabric the loose ends can be darned neatly into the fabric (fig.7) or, on very fine and firmly woven linen, the threads can be cut close to the edge which is then neatened by buttonhole stitch (fig.8).

Completing the hem. Turn up the hem, mitring the corners, so that the fold of the first turning is level with the outer edge of the border and tack in place (fig.9).

Basic drawn thread stitches

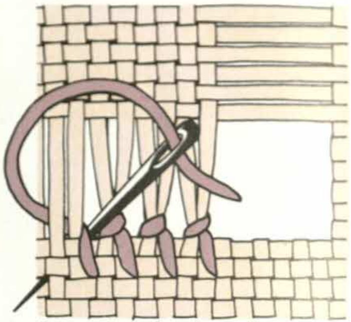
Hemstitching. This is always worked along both sides of borders to strengthen the edges of fabric, to group the threads within the border so that decorative stitchery can be worked on them and to secure the hem if necessary. It may be worked with either the right or the wrong side of the fabric facing up.

☐ Starting at the right-hand corner of the outside edge of the border, either darn in the end of the working thread or knot the end and run it along the fold of the hem so that the knot is inside.

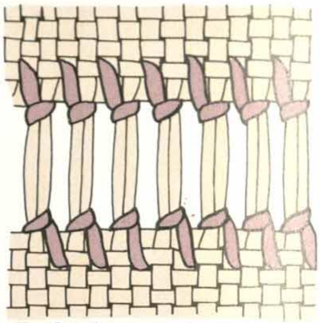
☐ Wrap the thread around two, three or four threads of the border, make a hemming stitch into the fabric (thus securing any hem), then overcast the next group of threads in the border (fig.10). Continue in this way hemming and overcasting alternately along the border, always picking up the same number of threads in the overcast groups and making the hemming stitch over the same number of threads in the fabric.

☐ Work along the opposite edge of the border overcasting the same groups of threads and hemming the fabric to match the first side (fig.11a). With four threads in each group the stitching can be worked so that it picks up half the threads of one group with half the threads of the next group (fig.11b).

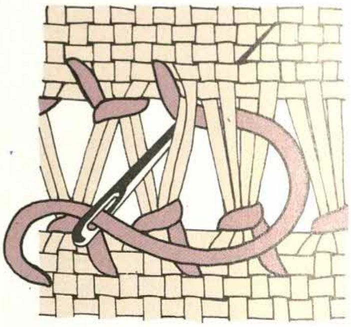
Diamond hemstitch. This is an attractive technique to use for borders where you do not have to secure a hem and where a band of undrawn threads has been left between the drawn borders. The undrawn band



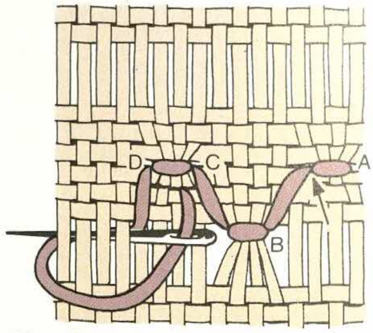
10. *Grouping the threads.*



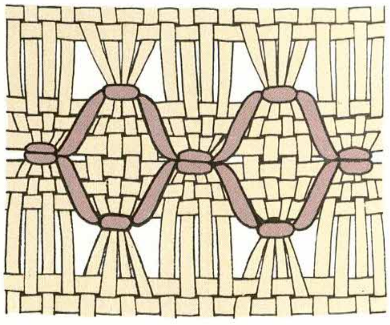
11a. *Both edges stitched.*



11b. *Splitting the groups.*



12a. *Starting diamond hemstitch.*



12b. *Diamond hemstitch complete.*

Johnnie Ryan

Simple borders, of various widths, threaded with ribbon.

should consist of an even number of threads. When working it, pull all the stitches firmly to form the diamond shape.

☐ Bring out the thread at the arrow in the centre of the undrawn band. Insert the needle at A (fig.12a), bring it up at the arrow and insert at B. Encircle the group of threads to be tied in the border, insert the needle at C and bring up at D. Re-insert at C and bring up at D. Continue like this to the end of the row.

☐ Turn the fabric round and work the second row in the same way. Notice how the connecting stitches are worked into the same holes as the stitches of the first row (fig.12b).

Twisted border. This is worked on the group of threads formed by hemstitching. On a narrow border the groups of threads are twisted together in pairs (fig.13a) or, for wider borders, two or three rows of twisting can be worked (fig.13b). To make an attractive variation you could use narrow ribbon instead of thread or you could pick up beads on the needle between each twisting.

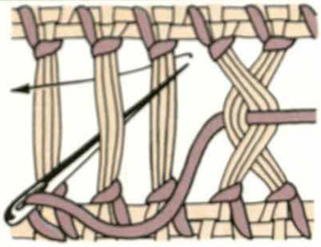
☐ Anchor the working thread to the outside edge of the open square at the corner of the border. Pass the needle over the first two groups of threads, then back under the second group and over the first group (see fig.13a). Pull the thread taut so that the groups twist. Repeat this process along the whole border and take the thread across the open space at the corner and fasten off on the wrong side.

Coral stitch knot border. These knots can be used to tie the groups of threads as shown in fig.14a or as shown in fig.14b. To form the knot, loop the thread on top of the groups and pass the needle behind the groups and through the loop as shown.

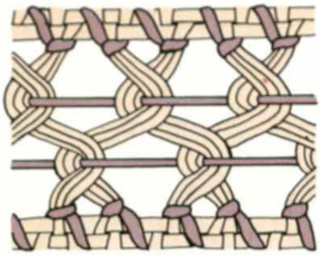
Woven spider's web. When working twisted borders which cross each other (see fig.1), the open square at the corner or intersection may be filled with a spider's web. Work the decorative stitching along one border, form the web as described below and then work the stitching along the second border so that you have the correct number of spokes for weaving the web (fig.15).

☐ Add two diagonal crossing threads to the thread already in the square and twist the thread over them. Join the working thread to the edge of the square (point A) and make a spoke to the centre of the web. Weave round the spokes as shown in fig.15a.

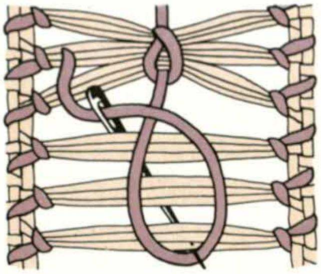
☐ Take the thread back to the centre of the spoke on the wrong side of the web and start the decorative stitchery of the second border as shown in fig.15b.



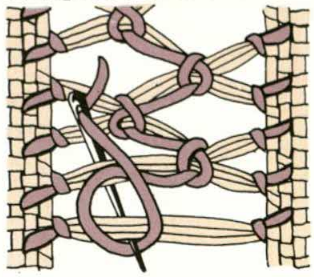
13a. *Starting a twisted border.*



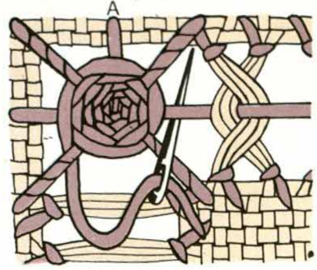
13b. *Twisted border complete.*



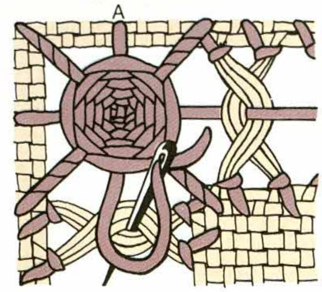
14a. *Groups tied by coral knots.*



14b. *Variation of coral knots.*



15a. *Weaving the spider's web.*



15b. *Starting second border.*

Coral Mula

Making hats from rushes

Rush hats are very attractive and can be decorated in a variety of ways. They are extremely light, are easy to make and are long-lasting. If you are unable to obtain rushes try using irises, montbretia or gladioli. Prepare rushes before starting the hat (Basketry chapter 12, page 1415).

A rush hat

The hat is made from fine rushes. Its shape depends on the mould used and of course the trimmings are optional.

You will need:

450gm (1 lb) fine rushes—the quantity will vary according to size and shape.

Linen thread and rush threader.

Mould—a milliner's hat block or use a plastic bowl and pad it with paper if necessary to equal the size of the head at the position of the hat band.

Spider base—the hat is started with a spider base.

☐ Select 7 rushes about 1cm ($\frac{3}{8}$″) across and tie them together in the centre with thread. The length is unimportant as they can be replaced if necessary before making the brim.

☐ Spread out the rushes on a table with each rush folded in half to make 7 pairs (fig.1).

☐ Using a fine weaver, pair for 3 rounds. Keep the pairing close to the centre.

☐ After the third round open all the rushes to singles and continue to pair for another 19mm ($\frac{3}{4}$″).

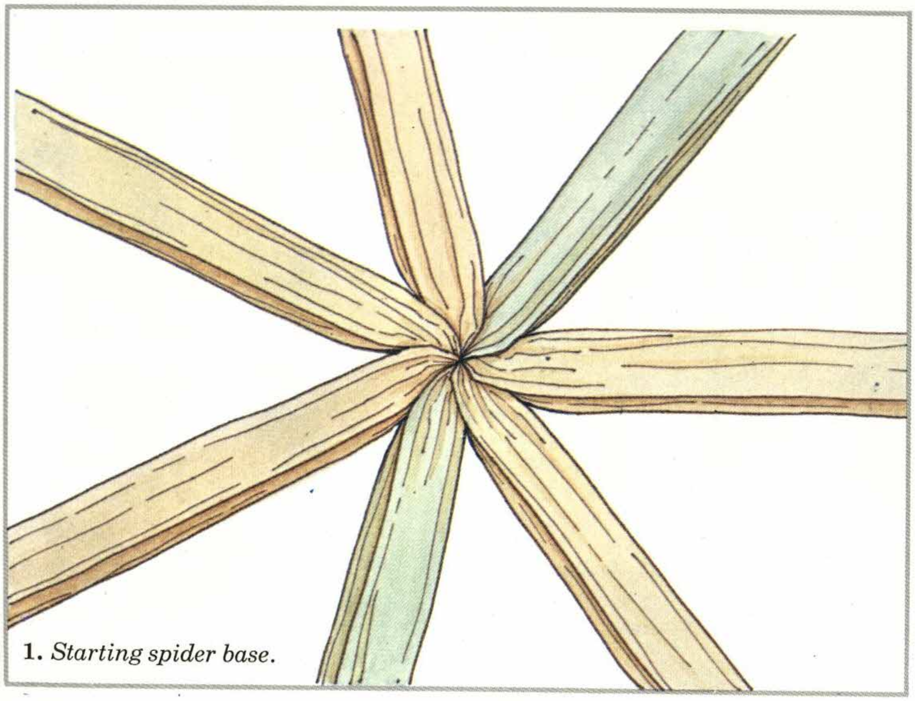
☐ Select 7 rushes about 50cm (20″) long and 12mm ($\frac{1}{2}$″) wide. Thread the thin end of each into the pairing next to every alternate stake. Pair for one round and on the next round open all the stakes to singles—you will now have 21 stakes.

☐ Pair for 19mm ($\frac{3}{4}$″) with fine rushes. Add another rush to every third stake as before so that you have 28 stakes.

☐ Tie the work on to the mould as described in the previous chapter. The rest of the weaving must follow the shape of the mould until the brim is started.

☐ Pair for another 19mm ($\frac{3}{4}$″). The base should now measure about 13cm (5″) across.

☐ Select 28 rushes of similar thickness and about 46cm (18″) long and thread each into the pairing against an existing stake. Put on one round of pairing and on the next row open out all the stakes to singles so that there are 56 stakes.



1. *Starting spider base.*

Paul Williams

☐ Pair for one more round.

To complete the hat you will need stakes of a reasonably even thickness and long enough to put on the trac border. Start adding new rushes if necessary as you weave the sides of the crown.

☐ To do this, select a rush for each stake that is shorter than the additional rushes added to the original 7 pairs. Thread each rush into the work in the same channel as the rush needing replacement. However, do not worry about this until necessary but make sure it is done before starting the border.

The top of the crown is now completed and the side of the crown can be put on. Make sure that the stakes fit closely round the mould or the weaving will be loose and untidy. If you have too many stakes and they overlap, weave two together at even spaces round the mould. If you have too few add in stakes by threading them into the pairing.

☐ The weave on the side of the hat shown is a diagonal weave (Basketry chapter 14, page 1482) but you can use another weave if you prefer. Make the sides about 9cm ($3\frac{1}{2}$″).

☐ Put on 3 rows of pairing to make the band part of the hat firm.

☐ Now the hat turns outwards for the brim. Turn the work upside down and upsett (Basketry chapter 14, page 1481).

☐ Wale or pair for four rows keeping the brim quite flat. If you find this difficult, remove the mould and stuff the work with crumpled paper to retain the shape. Then place it crown side up flat on the table and wale round—this will keep the brim flat.

Trac border—start with any stake and stroke it to flatten it.

☐ Measure 11.5cm ($4\frac{1}{2}$″) from the waling, and bend the stake neatly over to the right.

☐ Pass this stake over and under the next six stakes to the right and thread it into the weaving alongside the next stake.

☐ Repeat with each stake in turn, making sure that each one is carefully turned over at exactly the same distance from the weaving as the previous one. Weave the last few stakes over and under the stakes that have already been turned down—keep the pattern correct.

☐ Trim off all the ends. Shape the brim with your fingers to the shape that suits you best and allow the hat to dry in this position.

☐ Complete the hat with trimming of your choice.

Right: a rush hat made with a spider base at the crown and finished with a trac border. Designer: B. Maynard.

Sculptured racing car

Wood — modelling 6

Modelling wooden toys is great fun and the finished article is often handsome enough for display. The car illustrated is based on the technique described for three-dimensional sculpture (Modelling chapter 5, page 1302).

Racing car

The car is made from a piece of hardwood although it could be made from suitably grained softwood. It is about 36cm (14″) long. The wheels can be made of wood or plastic and can be purchased from most DIY stores.

You will need:

4 wheels about 50mm (2″) in diameter, with two 3mm ($\frac{1}{8}$″) axles, washers and spring caps.

Hardwood 75mm x 100mm (3″x 4″), 38cm (15″) long.

Piece of dowel 25mm (1″) diameter, 7.5cm (3″) long.

Tools—as for previous modelling chapters.

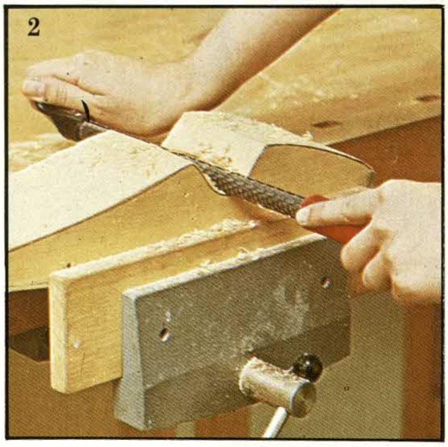
Drill bits for holes 6mm ($\frac{1}{4}$″) and 25mm (1″) diameter.

Tracing paper and felt-tipped pen.

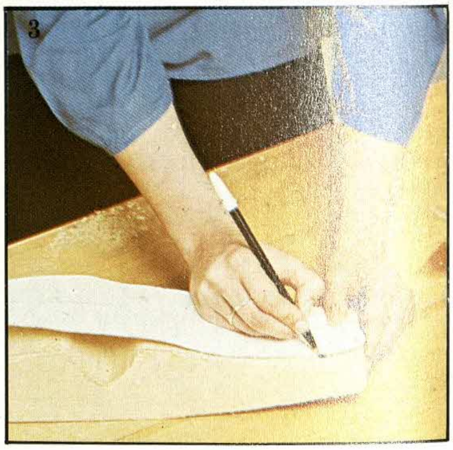
Medium and fine grade glasspaper or similar sandpaper.

☐ Trace the patterns overleaf on to tracing paper and cut out the shapes which will be used as templates.

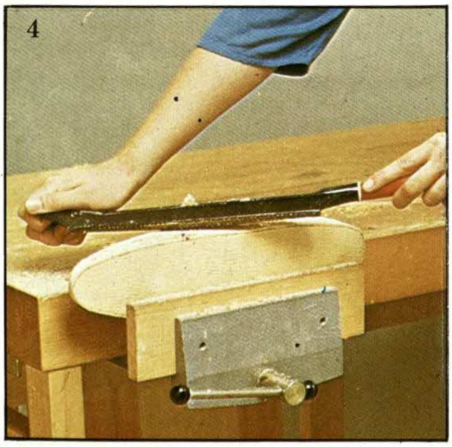
☐ Place the profile template in position on the wood and draw the outline with a felt-tipped pen.



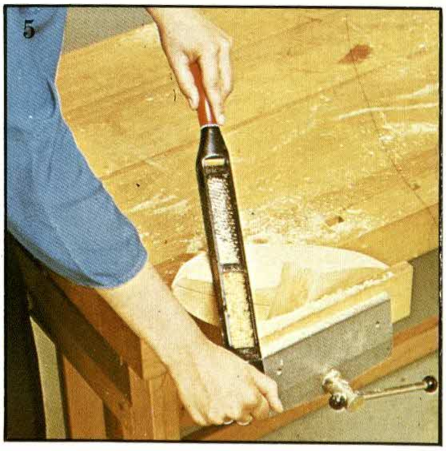
☐ Use a coping saw or a bow saw and cut out. Remove waste wood with a round Surform tool.



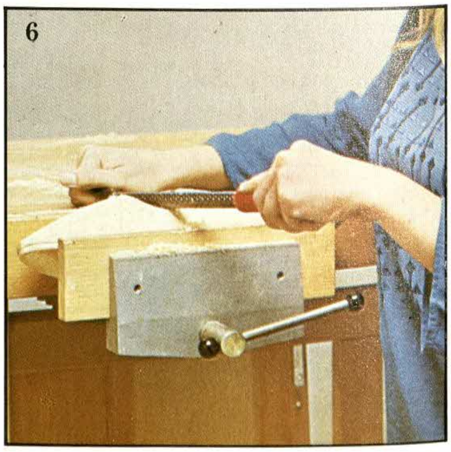
☐ Using the template draw the outline of the top view. Repeat this outline on the bottom.



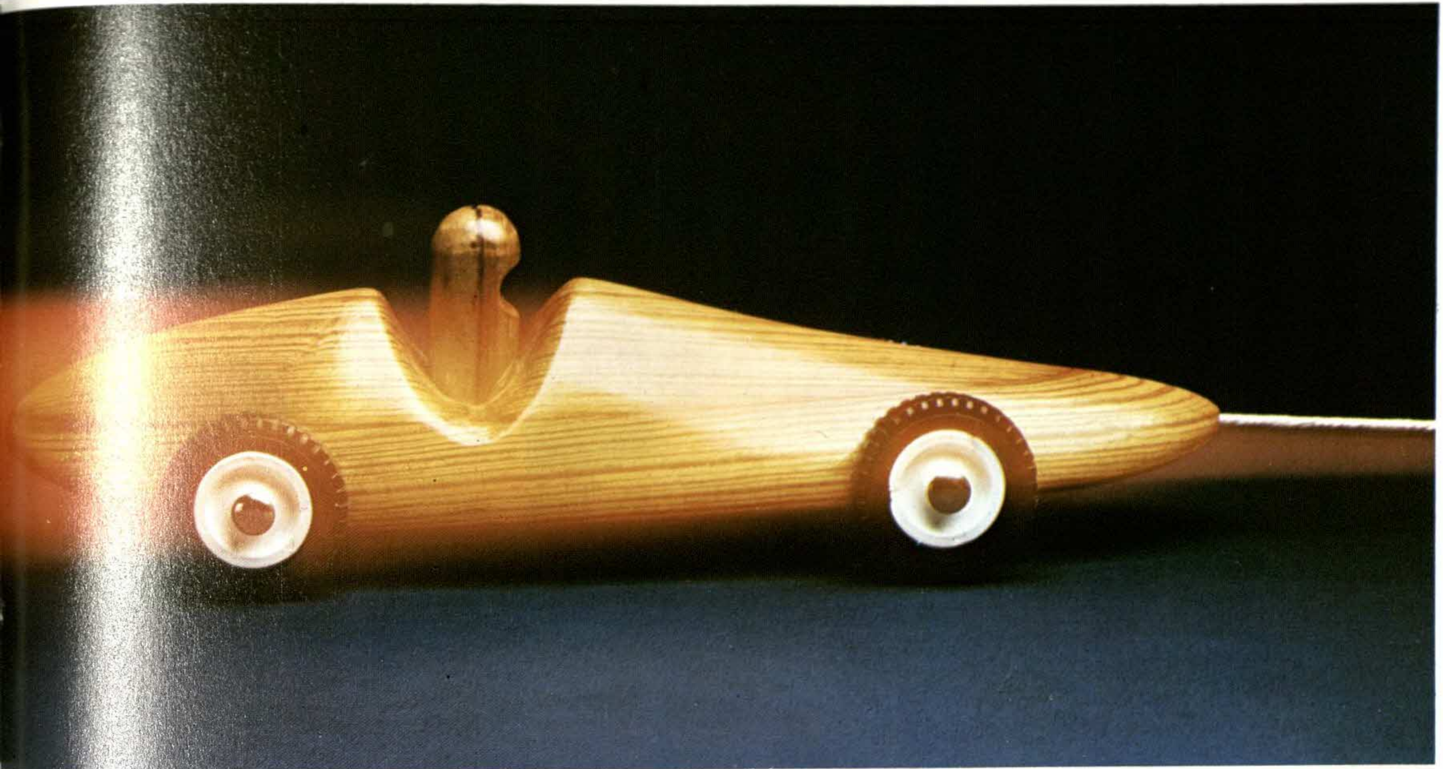
☐ Use the flat Surform tool and remove the waste to the lines indicated, making an elongated oval shape.



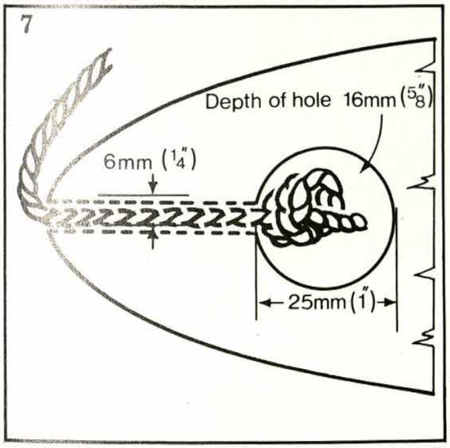
☐ Draw rounding off lines as indicated by dotted lines on pattern and round off to these lines.



☐ Shape the cockpit with the round Surform tool. Round off the edges to leave smooth curves.

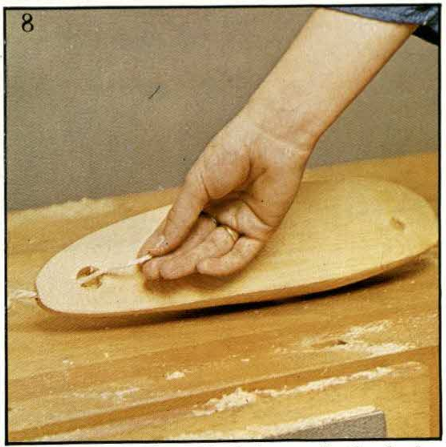


Alan Duns

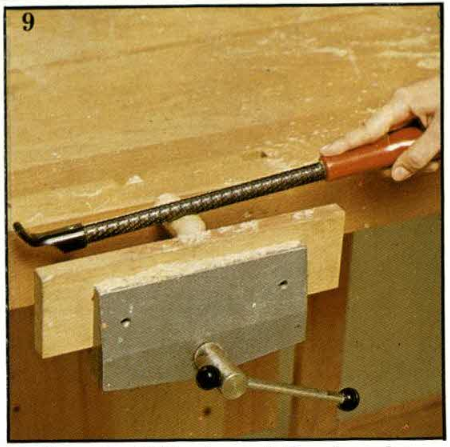


Trevor Lawrence

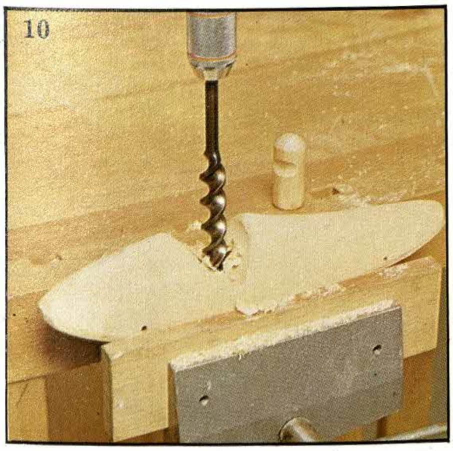
☐ Drill a 25mm (1″) hole 16mm ($\frac{5}{8}$″) deep under centre front. Drill a 6mm ($\frac{1}{4}$″) hole from front to intersect.



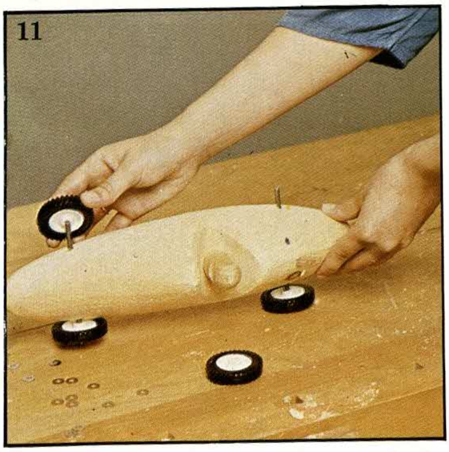
☐ String is threaded through the holes as shown to form a tow-line (although this is not essential).



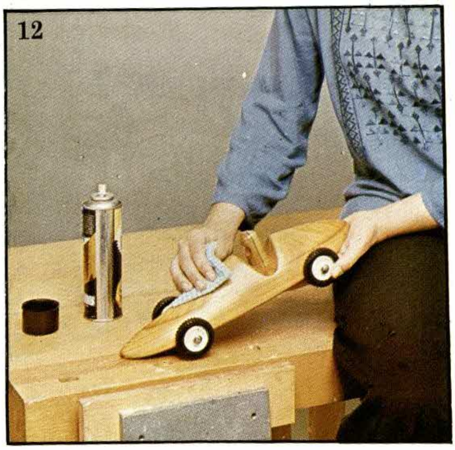
☐ Round off the top of the dowel to a dome shape and make a notch 25mm (1″) from the top.



☐ Drill a hole 25mm (1″) deep in the cockpit with the large drill bit and insert the dowel.

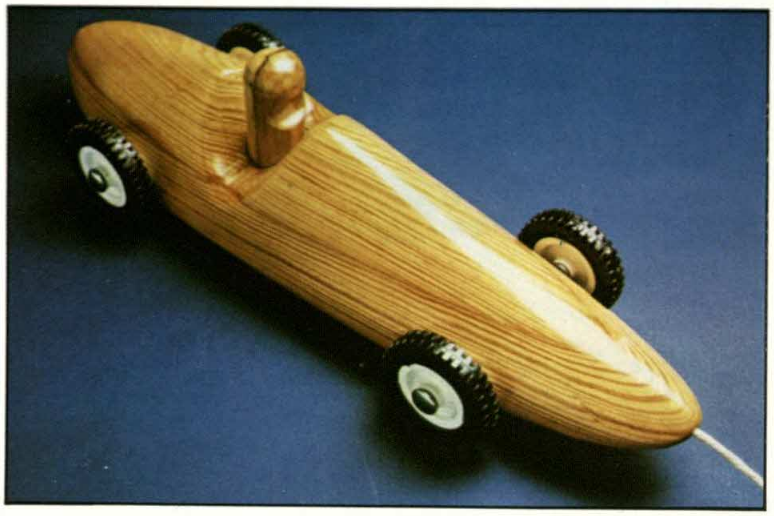


☐ Drill 6mm ($\frac{1}{4}$″) holes through body for the axles. Insert axles and assemble wheels with washers and spring caps.

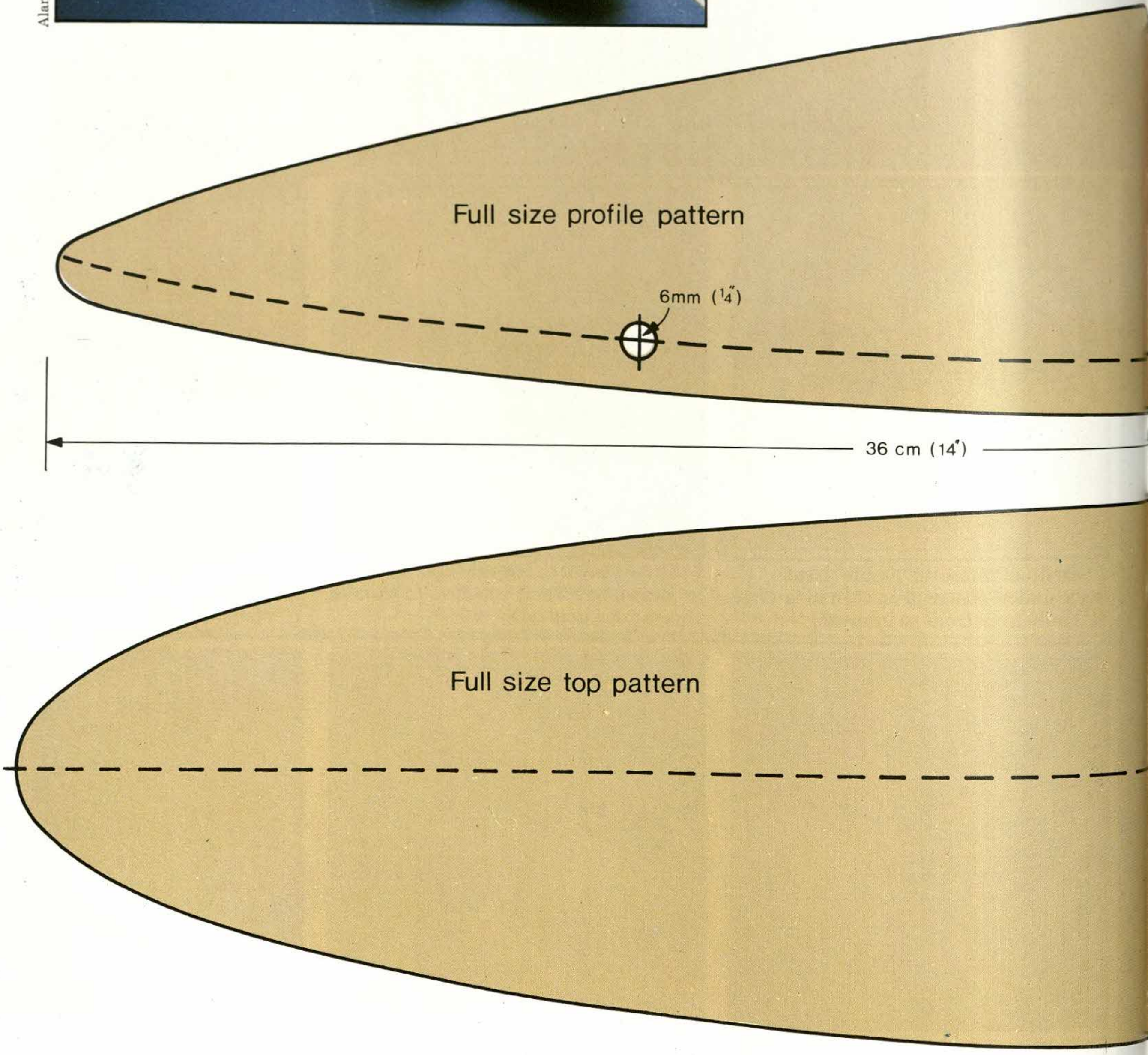


Dick Miller

☐ Smooth with medium and fine grade glasspaper. Apply wax or polyurethane varnish to finish.



Alan Duns


Full size profile pattern
6mm (¼")
36 cm (14")
Full size top pattern

Trace pattern for wooden car

The trace patterns: using a pencil and tracing paper, draw the outlines for the racing car template. Left: the completed racing car shown here has a tow rope attached. Designer: John Matthews.

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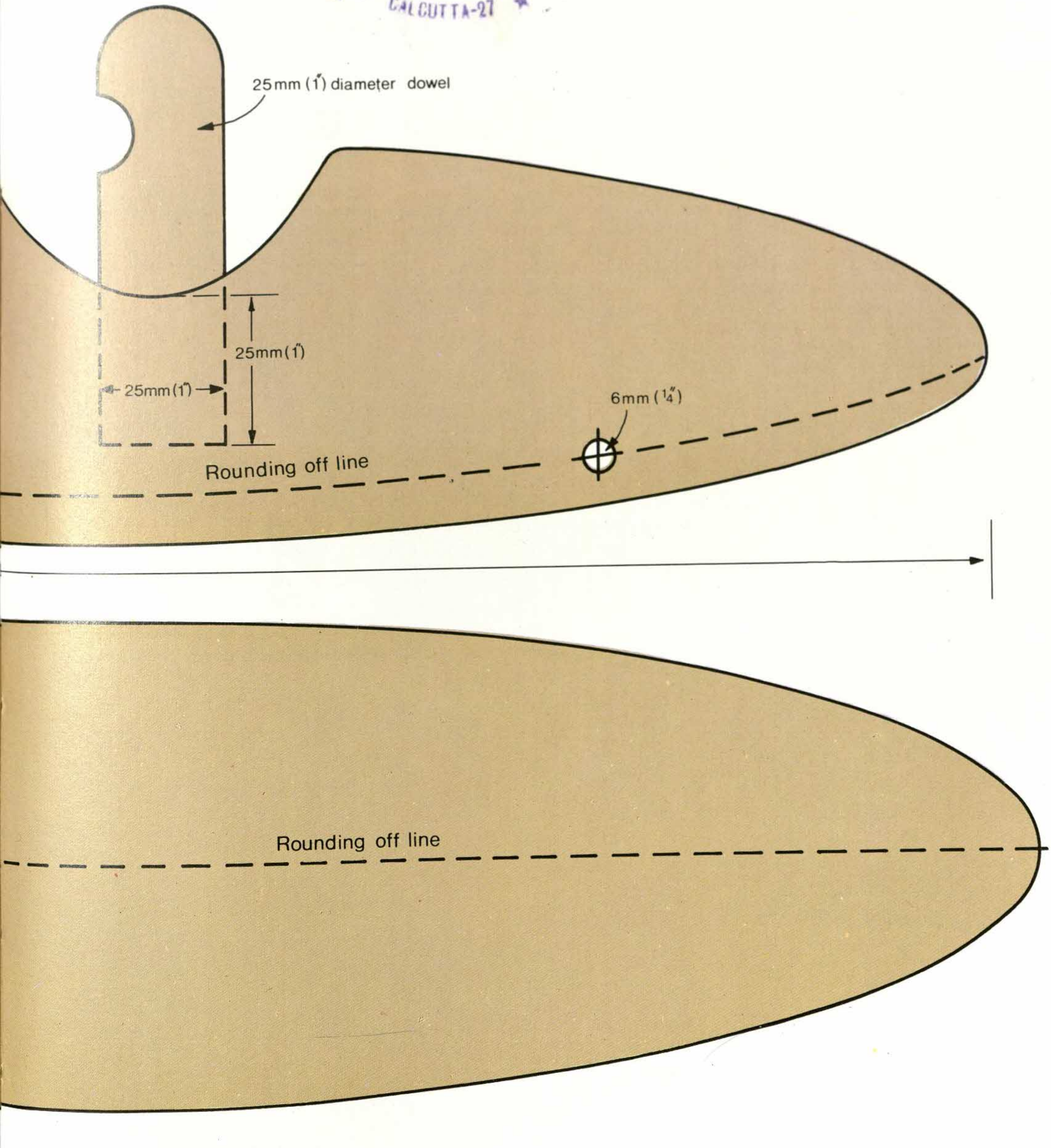


Trevor Lawrence

Cutting and gluing acrylic

Acrylic sheeting is probably better known by various trade names such as Perspex or Plexiglass. It is a thermoplastic which means that it becomes pliable when heated and can therefore be used for moulding and bending. It also has excellent clarity and can transmit 92% of light.

Acrylic is an extremely versatile material to work with—it can be dissolved with solvents such as chloroform, stuck together, cut, drilled and moulded to produce a wide range of useful and attractive objects. Ordinary wood-working or metal-working tools can be used for cutting acrylic although acrylic does tend to blunt saws and files rather quickly. Special glues are needed for sticking acrylic as many types of glue attack the plastic or will not adhere.

Acrylic comes in a variety of different forms: it can be bought in sheets, tubes, rods and blocks, and it is also possible to buy bags of offcuts which are cheaper and ideal for craft work.

Acrylic also comes in a wide range of colours: all colours of the rainbow in both clear and opaque, as well as black and white, luminous colours, and some special types such as mother-of-pearl. It is also possible to buy acrylic with special types of patterned surfaces.

Acrylic is a rather brittle substance and can become scratched or broken if not worked with sufficient care. When you buy acrylic sheeting it will be covered with protective adhesive paper. This paper should be kept on the acrylic during sawing and drilling, in fact until the last possible moment to prevent the surface of the acrylic becoming damaged.

In the next few chapters the various ways of working with acrylic—cutting, drilling, sticking, bending—will be discussed and these skills will be used to make a variety of different things, starting with a letter rack and pencil holder here.

Letter rack

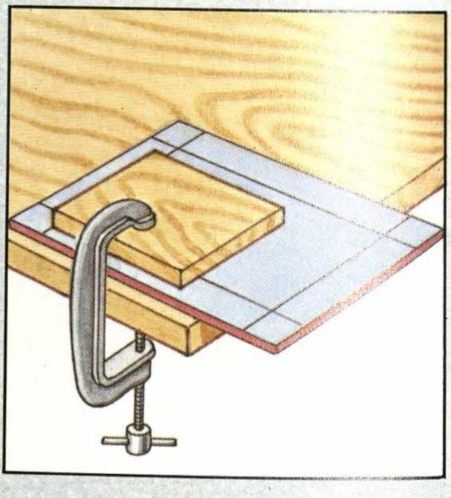
This letter rack is very simply constructed from a series of different coloured acrylic rectangles. It is 14cm x 10cm (5"x 4") and 14.3cm ($5\frac{5}{8}$") high.

You will need:

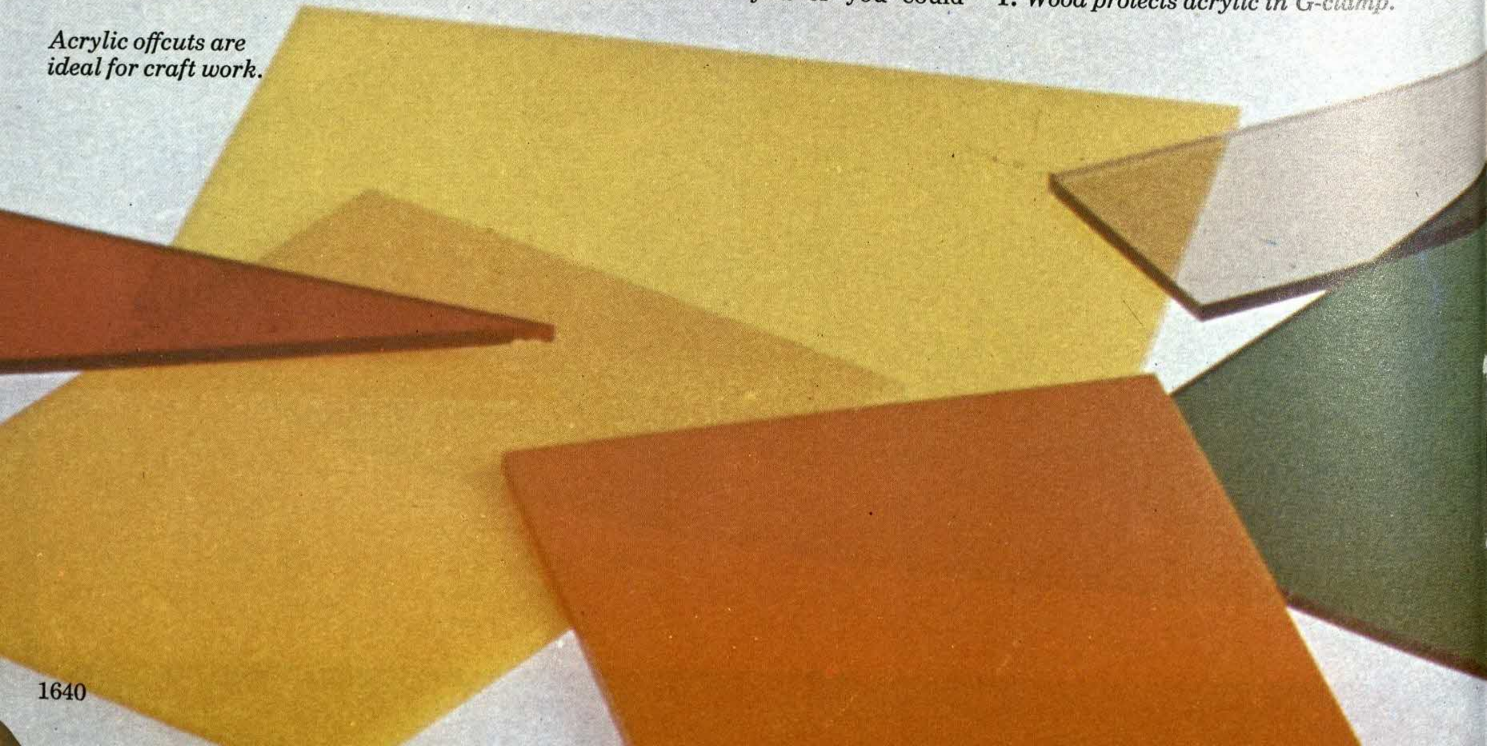
Acrylic sheet 3mm ($\frac{1}{8}$") thick in the following colours and sizes:
Yellow 14cm x 10cm ($5\frac{1}{2}$"x 4").
Orange 11.5cm x 10cm ($4\frac{1}{2}$"x 4").
Red 9cm x 10cm ($3\frac{1}{2}$"x 4").
Dark red 6.5cm x 10cm ($2\frac{1}{2}$"x 4").
Red 13.2cm x 10cm (5"x 4") for base.
(You could ask your supplier to cut the pieces to size for you or you could follow the instructions given here and cut the acrylic yourself.)
Hack saw or mechanical saw such as a Black and Decker (one with a fine-toothed blade).
Medium-sized wood file.
G-clamp.
Sharp knife such as a Swann-Morton scalpel.
Silicon carbide paper, medium and fine.
Soft cloth for polishing.
Thin stick such as an orange stick.
Metal polish such as Brasso.
Acrylic glue such as Tensol No.6.
Masking tape.
Pencil and ruler.
Set square.

Cutting. Leave protective paper on the acrylic and mark out rectangles using pencil, ruler and set square to get right-angled corners.

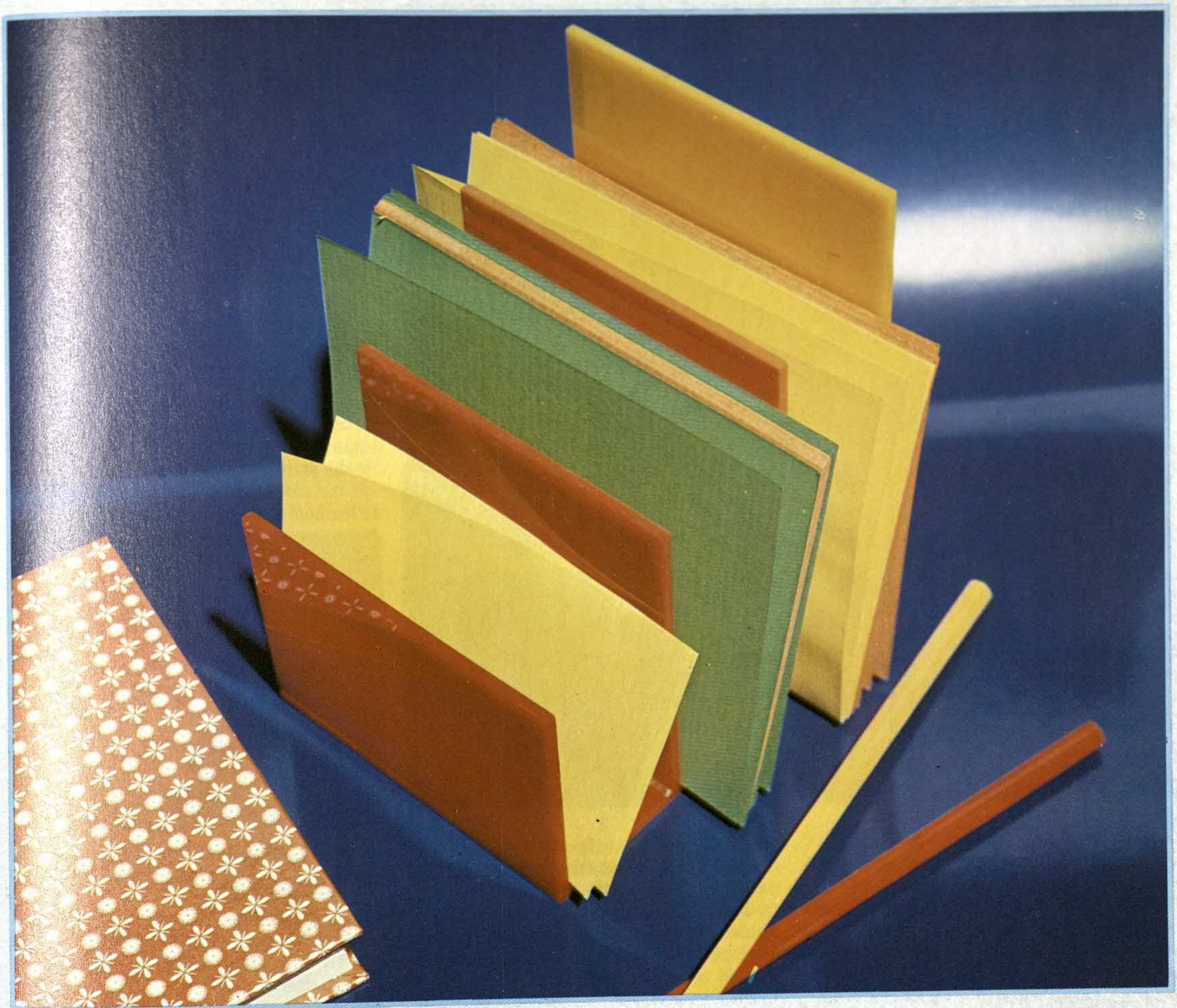
☐ Secure the acrylic sheet on to working surface with a G-clamp, using a piece of wood to protect the acrylic from pressure (fig.1).


Paul Williams

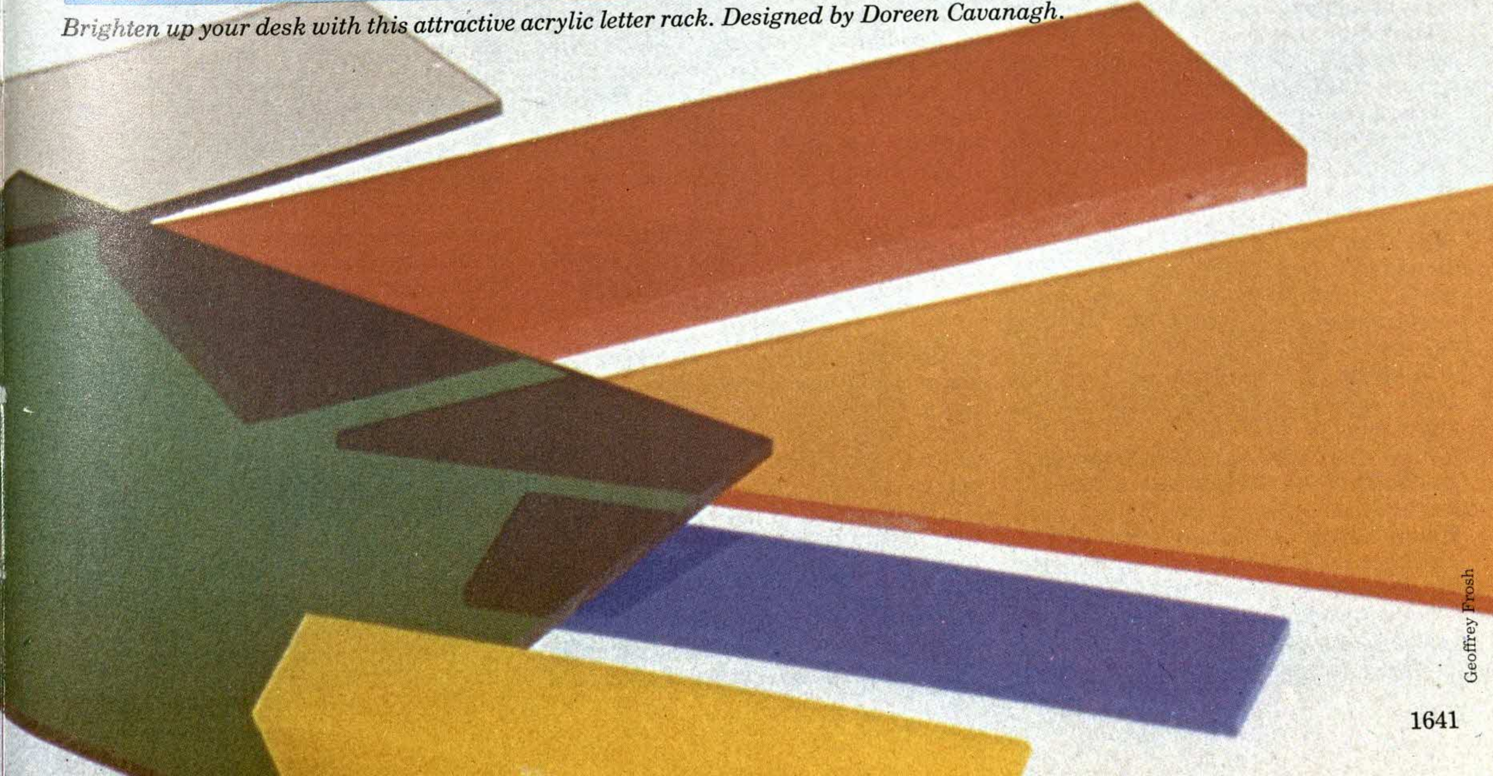
1. *Wood protects acrylic in G-clamp.*

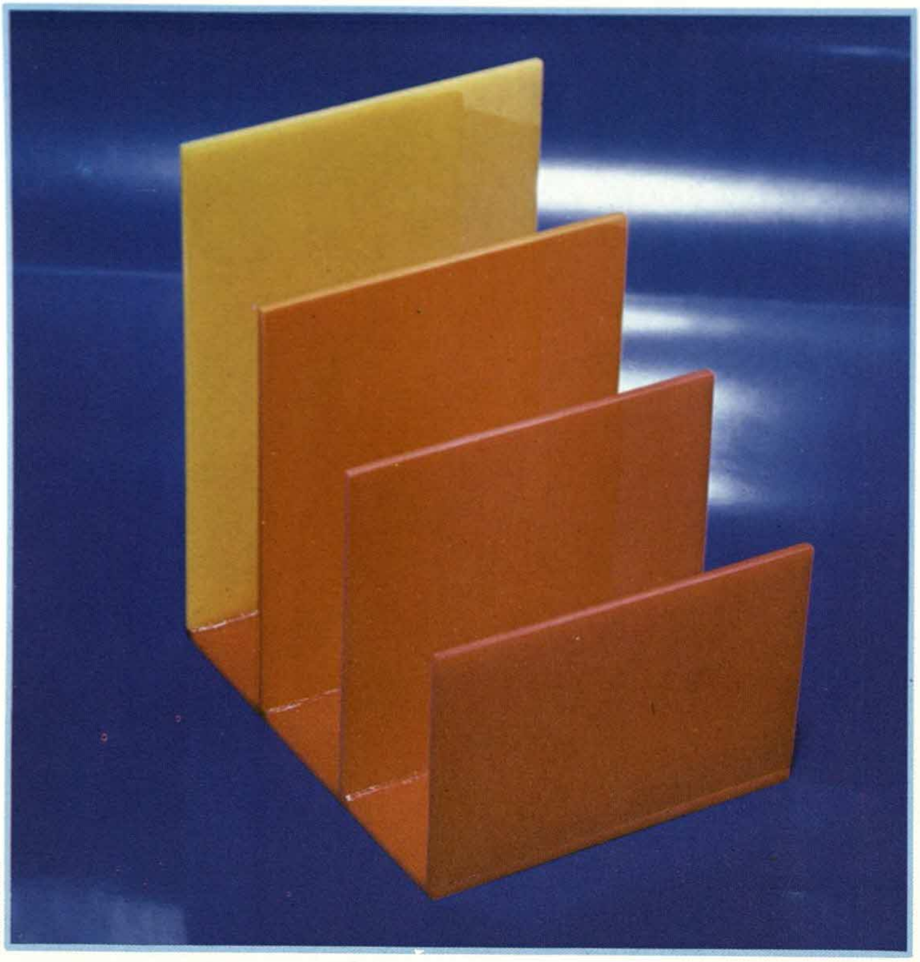


Acrylic offcuts are ideal for craft work.


Peter Heinz

Brighten up your desk with this attractive acrylic letter rack. Designed by Doreen Cavanagh.


Geoffrey Frosh



Peter Heinz

The finished letter rack in yellow, orange, and red acrylic sheeting.

☐ Using a hack saw or mechanical saw start to saw acrylic. Cut slightly outside the line to allow for sanding down afterwards.

Be very careful not to chip or crack the acrylic during sawing. This can be avoided by securing the acrylic firmly and sawing slowly and smoothly. Any great strain put on the acrylic by jerking or forcing the saw through it may cause chipping or crazing. If you are using a mechanical saw, beware of sawing too quickly. Heat generated by friction will melt the acrylic which will then join up again after the saw has passed through it.

☐ Once you have cut one side of the rectangle move the acrylic into position for sawing the next edge.

Finishing. When all the pieces of the letter holder have been cut out, the edges must be 'finished'.

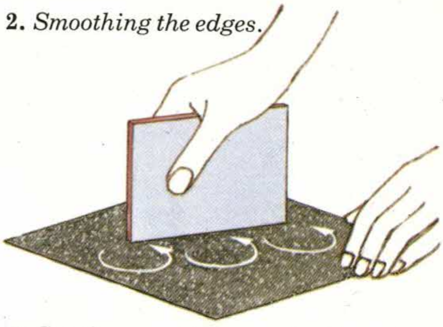
☐ Using a wood file, file down edges to pencil line until they are as smooth as possible.

One 10cm (4″) edge of each of the uprights (ie the edge to be glued on to the base) can be left unfinished. All other edges and the four edges of the base need further work.

☐ Place the medium silicon carbide paper on a flat surface and put a few drops of water in the centre of the paper.

☐ Rub the edges of the acrylic rectangles on the silicon carbide paper in a circular motion, making sure that the cut edge is placed flat on the surface of the paper (fig.2).

2. *Smoothing the edges.*



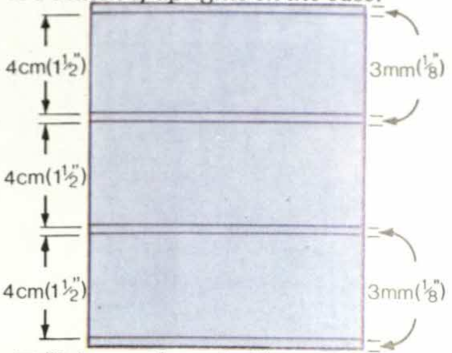
☐ Continue rubbing until the edges are as smooth as possible, then repeat the action using fine silicon carbide paper. The edges can be left with a smooth matt finish or they can be polished.

☐ Using a soft cloth, metal polish and lots of elbow grease, rub the edges until they are as smooth and shiny as possible.

Sticking. The acrylic pieces can now be stuck together to make a letter rack.

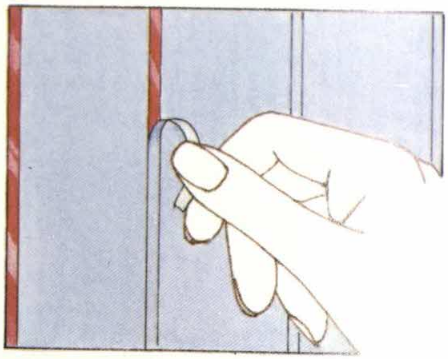
☐ Using a pencil and ruler mark out the position of the four uprights on to the base (fig.3).

3. *Position of uprights on the base.*



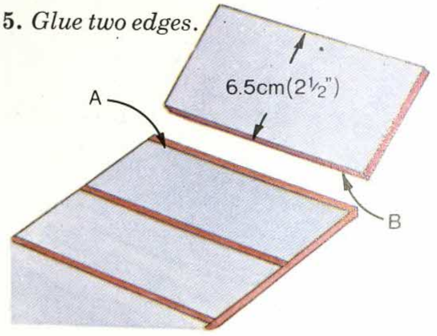
☐ Using a sharp knife cut the paper along the pencil lines but do not damage the acrylic underneath. Peel off the strips of paper (fig.4).

4. *Peel off strips to expose acrylic.*



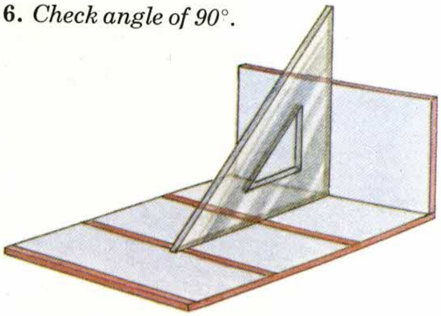
☐ Using a thin stick, paint some glue along strip A and along edge B (fig.5).

5. *Glue two edges.*



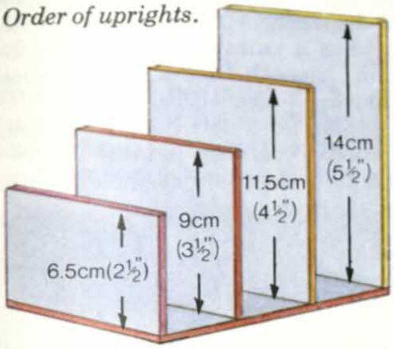
☐ Using a set square to make sure you are holding the upright at right angles to the base, put the two glued surfaces together and hold for a minute (fig.6).

6. *Check angle of 90°.*



☐ Repeat the process for the other three uprights making sure that they are in the right order (fig.7).

7. *Order of uprights.*



Although it takes some time to reach full strength, acrylic glue sets very quickly so you have to work fast. Beware of putting on too much glue.

☐ When you have finished gluing, peel off the rest of the protective paper and your letter rack is complete.

Pencil holder

It is about 15cm (6¼") square and 13cm (5") high.

You will need:

Tools, glue as for letter rack, and masking tape.

Acrylic sheet 3mm (⅛") thick, 15cm x 15cm (6¼" x 6¼") for base.

Acrylic tubing in the following sizes:

Two 6cm (2½") outside diameter, 8cm (3") long.

One 5cm (2") outside diameter, 13cm (5") long.

One 3.8cm (1½") outside diameter, 4cm (1¾") long.

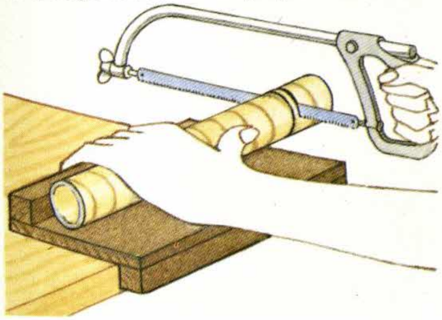
Bench hook or other L-shape to wedge tube against during sawing.

As acrylic tubing does not come with protective paper, you must first of all wrap outer surfaces with masking tape. If you have not bought the tubing cut to the required lengths, follow these instructions for cutting the tubes.

☐ Using a pencil and ruler, mark off the required lengths on tubes.

☐ Wedge tube against bench hook and saw through tube (fig.8). Saw just outside the line to allow for finishing. Once you have cut through the thickness of the tube wall, start to turn the tube towards you as you saw, so that you are cutting one rather than two thicknesses at the same time.

8. *Wedge tube in L-shape for cutting.*



Peter Heinz

This pencil holder will help keep your desk tidy. Designer Doreen Cavanagh.

☐ Cut base as for letter holder.

☐ Finish off cut ends as for letter holder. Only one end of each tube and the four sides of the base need polishing.

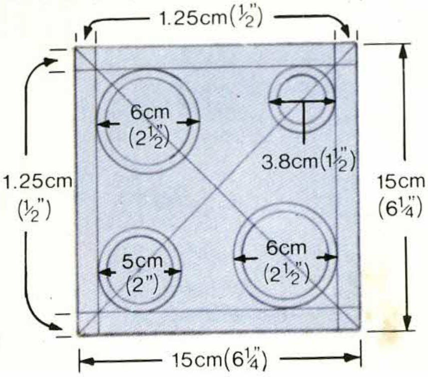
☐ Using a set square check to see that the sides of the tube make a right angle with the base.

☐ If the tube does not stand up straight, sand down where necessary.

Sticking. Mark out location of tubes on base as shown in fig.9. Put the two similar tubes diagonally opposite each other.

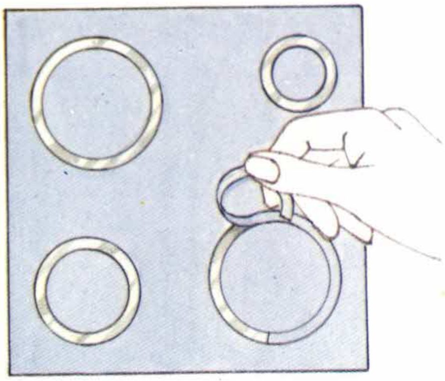
☐ Draw the outlines of the tubes by placing tube in position and drawing round the inside and outside edges on to the base.

9. *Mark positions for tubes on base.*



☐ Cut along pencil lines and peel off paper (fig.10) as for the letter rack.

10. *Peel off paper to reveal acrylic.*



Paul Williams

☐ Apply glue to unpolished end of tube and to the corresponding location on base. Peel off paper inside circle.

☐ Put the two surfaces together and hold firmly for a minute.

Stick the other three tubes in the same way.

☐ Peel off protective paper and masking tape when glue is completely dry.

Bedspreads plain and flounced

Cloth — sewing 20

The quickest and easiest type of bedspread to make is the trimmed oblong piece of fabric you throw over the bed. For this type of bedspread choose a fabric that is crease-resistant and has a pattern or a texture, as a plain smooth fabric will appear crumpled—even with care.

If you prefer a soft, feminine room, a flounced bedspread is ideal. Light- or medium-weight fabrics, including dress

Sanderson

and lacy fabrics, can be used, but do not use a heavy fabric because it will not gather easily. Also avoid large patterns which need careful matching at seams so causing a lot of fabric wastage.

Throw-over bedspreads

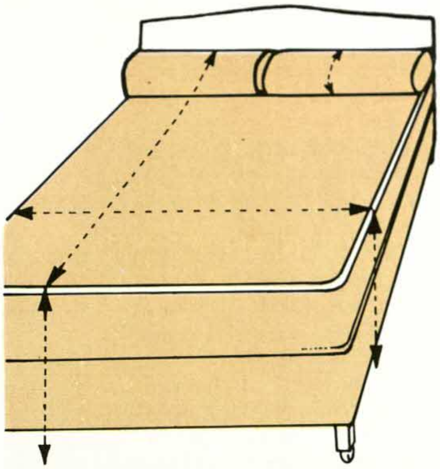
Throw-over bedspreads are easy to make and can be finished with either round or square corners.

A flounced bedspread made in fabric to match wallpaper and curtains.

You will need:
The calculated quantity of fabric.
The calculated quantity of braid or fringing (optional).
Matching thread.
Tape measure and pins.

Taking measurements

☐ For the width, measure from the floor on one side, up and across the bed to the floor on the other side. Add 2.5cm (1″) at each side for hem.



1. *The arrows indicate where the measurements should be taken.*

☐ For the length, measure from the top of the pillow to the floor at the foot of the bed (fig.1). If you wish to tuck the bedspread under the front of the pillows, add an extra 30cm (12″) to the pillows length. Add 2.5cm (1″) to each end for hem.

☐ If a deep fringe is to be added to sides and foot, shorten measurements accordingly when cutting out.

Fabric requirements

As furnishing fabrics are usually 120cm or 137cm (48″ or 54″) wide plus selvedges, you will normally need to join widths of fabric. Therefore double the length measurement to calculate how many metres (yards) to buy. Six metres (6 yards) is usually ample for an average single or double bed 190cm (6′3″) long.

As there will be some wastage when making a single bedspread, a 91cm (36″) dress fabric might be more economical. If the fabric you choose has a large repeated design, you will need extra fabric for matching the pattern (see Sewing chapter 16, page 1474).

Making the bedspread

☐ Cut the fabric across from selvedge to selvedge into two equal lengths. Then, to avoid having an ugly seam down the centre of the bedspread, cut one of these pieces in half lengthways.

For a single bed the seams should be along the side top edges of the bed, so cut the centre piece to that width plus 1.5cm ($\frac{1}{2}$″) seam allowance at each side. (If the pattern on the fabric is large, cut an equal quantity from each side of the centre piece, to keep the centre of the pattern in the centre of the bed.) For a double bed the seams are controlled by the width of the fabric, and one width will form a panel down the centre of the bed.

Joining the panels

☐ With the pattern running in the same direction on each panel, and the pattern matching, attach the side panels. With right sides facing, pin and tack them to the centre piece taking 1.5cm ($\frac{1}{2}$″) turnings.

☐ Place the bedspread on the bed and check the size. Cut off any excess fabric at top and bottom leaving 2.5cm (1″) for hems.

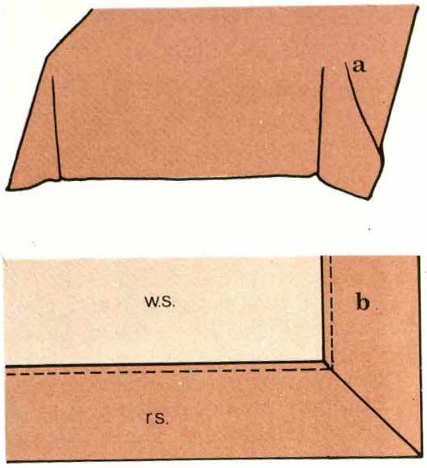
☐ Measure and cut the sides of the bedspread to the required depth plus 2.5cm (1″) at each side for hems.

☐ Machine stitch the seams using a medium-length stitch, clip the selvedges at intervals and press the seams open.

☐ Neaten raw seam edges with a zigzag stitch, or by hand oversewing.

Square corners

☐ Make a hem along each side of the bedspread by turning in 5mm ($\frac{1}{4}$″) to the wrong side, then a further 2cm ($\frac{3}{4}$″). Tack the hem in position.



2. *Square corner on a plain bedspread.*

Coral Mula

☐ Make a hem in the same way along the top and bottom of the bedspread mitring the corners (fig.2). See Sewing chapter 5, page 264. Machine stitch along inner fold.

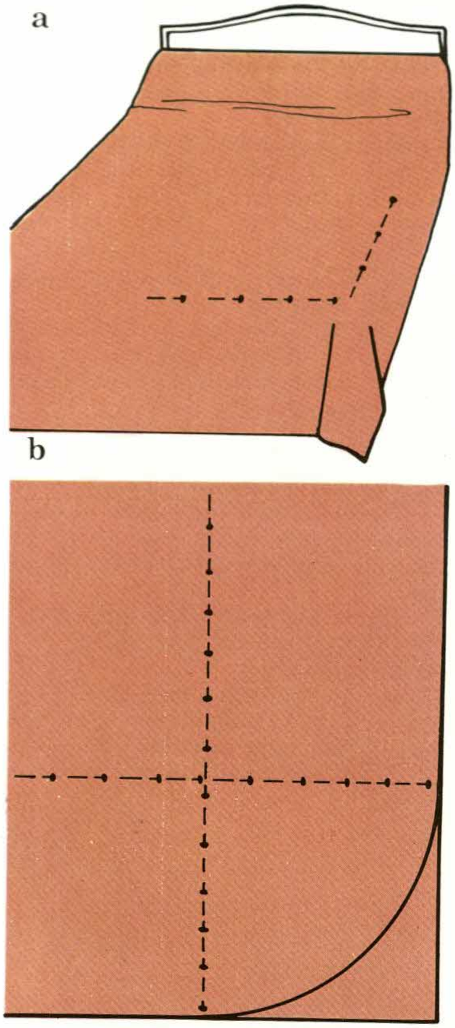
☐ Remove the tacking and press hem.

☐ If braid or fringing is required, measure the completed bedspread along both sides and across the bottom. Machine or hand stitch the braid or fringing into place.

☐ Press the bedspread all over.

Rounded corners

☐ Put the unhemmed bedspread on the bed. Place a row of pins along the top edges on one side and along the foot to mark the depth of the overhang plus 2.5cm (1″) for hem (fig.3a).



3a. *Pins in place on the top edge.*
3b. *Arc drawn on corner of bedspread.*

☐ Take off the bedspread and place flat, continue the line of pins to the edges.

☐ Draw an arc on this corner using the pin and string method (Design know-how chapter 1, page 28) and from one row of pins to the other.

☐ Cut along the curved line (fig.3b).

☐ Fold the bedspread in half lengthways, pin and cut the other corner to match (Sewing chapter 5, page 264).

☐ Turn under the hem along the sides and bottom of the bedspread and tack, easing in the fullness of the fabric at the corners. Machine stitch, remove the tacking and press.

☐ Make a straight hem at the top of the bedspread leaving the corners square.

☐ If required, trim with braid or fringing as for square corners and press the bedspread all over.

Flounced bedspread

You will need:

The calculated quantity of fabric.
Matching thread.
Tape measure and pins.
A large sheet of paper and a pencil.

Taking the measurements

This bedspread is made to go under the pillows so that the flounce will not be distorted. A throw-over flap of the same fabric can be attached to the top of the bedspread, brought forward over the pillows and tucked in. Make a note of the measurements as you take them —they will be needed to calculate the quantity of fabric required.

☐ For the width and length of the main piece, measure across the top of the bed from edge to edge and from head to foot. Add 3cm (1″) to each measurement for turnings.

☐ If the bed has a solid footboard and you do not need a flounce along that edge, add 45cm (18″) to the length so that it can be tucked in neatly.

☐ For the depth of flounce, measure from the edge of the bed to the floor and add 4cm (1½″) for seam and hem.

☐ For the length of a continuous flounce around both sides and the foot of the bed, you need one and a half times the total measurement of the two sides and one end of the bed.

☐ For the pillow flap put the pillows back on the bed and measure from the top of the bed over the pillow to the other side. Add 15cm (6″) for the tuck-in and seam allowances.

☐ For the width of the pillow flap, add 30cm (12″) to the width of the bed so that the flap will cover the pillow easily at both sides.

Fabric requirements

☐ To calculate the quantity of fabric required, draw a chart. Take a large piece of paper and draw an open-ended rectangle with the width representing the width of the fabric you plan to use. The simplest scale to use is 1cm to 10cm or 1″ to 10″. The sample chart shows a layout for an average double bed (fig.4).

☐ Draw the main section first. If the bed is wider than the fabric, measure the remaining section on either side, adding 4.5cm (1½″) to the width of each section for turnings.

☐ Draw these panels along the selvedges so that the pattern can be matched more easily to the main piece.

☐ For the flounce cut strips across the width of the fabric, so that the pattern if any, will run down towards the floor.

☐ To calculate how many strips you will need for the flounce, in a plain or small-patterned fabric, draw the strips to the calculated depth. Calculate how many strips would be required to make up the required length. Allow 3cm (1″) on each width for turnings.

☐ If you have chosen a fabric with a large repeated pattern, considerably more fabric may be required to match the pattern on the flounce and this will vary according to the pattern. It is therefore advisable to choose small patterns.

☐ Draw the pieces for the pillow flap, calculating the width in the same way as for the main section.

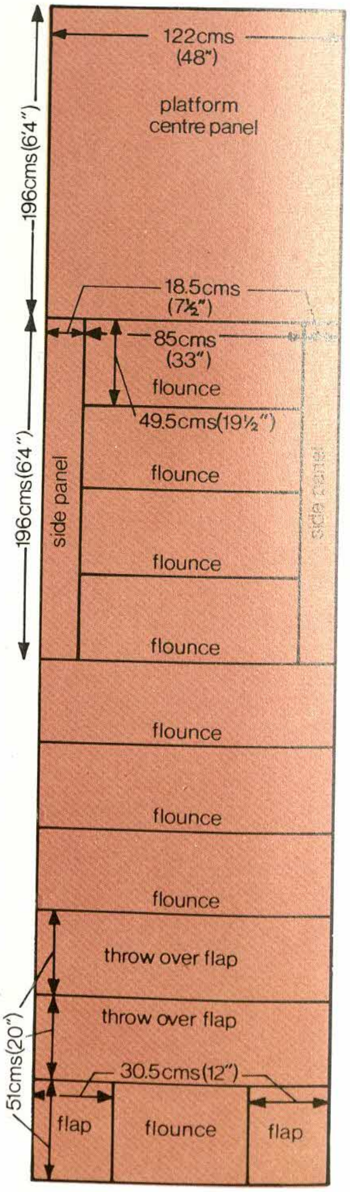
☐ When you have drawn in all the main pieces and marked each piece, draw a line across the bottom of the chart. Measure the length of the rectangle and convert back to give the amount of fabric required.

Cutting out

☐ Cut out all the pieces to the size shown on your cutting chart, matching the pattern where necessary.

Making up

☐ Taking 1.5cm (½″) turnings throughout, join any side panels to the main section as described in making the throw-over bedspread.



4. *Sample cutting chart.*

☐ Join the pieces for the flounce and press seams open.

☐ Make a 2.5cm (1") hem as for the throw-over bedspread along the short ends of the flounce. This will go to the head of the bed. Press.

☐ Make hems along the bottom of the flounce in the same way.

☐ Divide the flounce into eight equal sections, and the sides and foot of the bedspread top into eight equal sections, marking the divisions with tacking. (If there is no flounce at the foot, divide into six sections.)

☐ Gather the top 5mm (¼") from the edge of the flounce, using a long machine stitch or short running stitch. Work another row of gathering 1cm (⅜") from the edge.

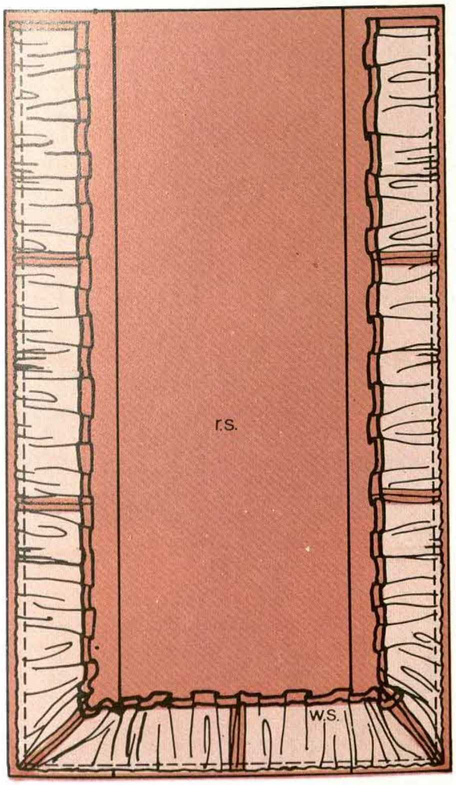
☐ Put ends of the flounce 1.5cm (½") in along each side from the top of the main section and match the other divisions on the flounce to those on the top section. Pin with the right sides of the fabric together. The tuck-in is attached to the top of the main section after the flounce has been sewn to the other two sides and foot.

☐ Draw up the gathering to fit and pin, placing the pins at right angles to the edge of the fabric so that the gathering can be adjusted easily. Tack and machine stitch the flounce to the top section taking 1.5cm (½") turnings (fig.5). Press the turnings up on to the main section and overcast together.

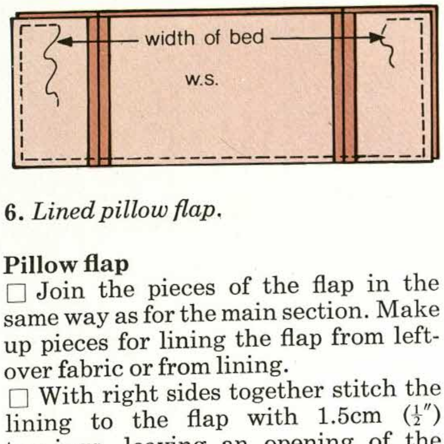
☐ If you are not having a flounce at the foot of the bed, make a narrow hem around the edges of the tuck-in piece.

A plain throw-over bedspread in a pretty fabric with the edges trimmed in white fringing.

Sanderson



5. *Flounce gathered and stitched to top.*



6. *Lined pillow flap.*

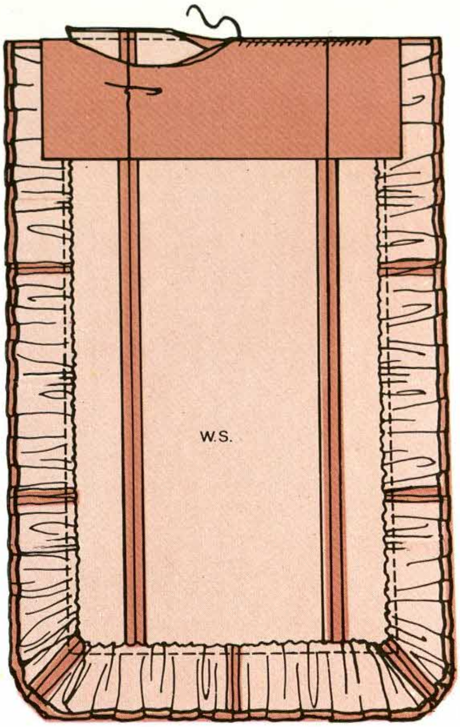
Pillow flap

☐ Join the pieces of the flap in the same way as for the main section. Make up pieces for lining the flap from left-over fabric or from lining.

☐ With right sides together stitch the lining to the flap with 1.5cm (½") turnings, leaving an opening of the same width as the top section in the middle of the top edge (fig.6). Turn right sides out and press.

☐ With the right side of the flap facing the wrong side of the main section, fit the top edge of the main section to the opening and pin it to the top piece of the flap only, leaving the lining free to turn in later.

☐ Stitch the pieces together, taking 1.5cm (½") turnings. Press the seam towards the flap. Fold the lining over the seam and hem down enclosing the raw edges (fig.7). Press.



7. *Right side of pillow flap stitched to top of bedspread, lining turned in and slip-stitched to enclose turnings.*

Coral Mula

Gilding the traditional way

Colour — paint 21

Traditional gilding falls into two main categories: oil gilding and water gilding. Oil gilding, which involves gilding on an oil size base, is the simpler of the two and, unlike water gilding, can be used on both exterior and interior surfaces. It cannot, however, be burnished and for this reason the more complicated technique of water gilding is preferred for fine interior decoration.

This chapter is an introduction to the principles and materials of traditional gilding and deals with the step-by-step technique of oil gilding with leaf.

Leaf

Leaf, refers to thin slivers of metal—pure gold or silver or alloys—which are used to decorate a prepared surface either entirely or along portions such as the moulding of a door. (This partial gilding is known as 'parcel' gilding.)

Common leaf refers to leaf which is made from alloys and there are several types. These are comparatively inexpensive and are heavier and therefore easier than precious leaf to handle. Common leaf makes a fine material for beginners to work with before investing in precious leaf, and also produces a handsome finish.

Perhaps the best type of common leaf is an alloy of copper and zinc called Dutch metal which gives a gold leaf effect. An aluminium leaf, while darker than silver, gives an effective pewter-like appearance.

Common leaf is generally available in 14cm ($5\frac{1}{2}''$) square sheets ,or leaves which are pressed in a book of 25 leaves; 20 books make a package and will cover about 8 sq m (9 sq yd).

Precious leaf. True gold leaf is $23\frac{1}{4}$ carat gold which has been cut into leaves 9.5cm ($3\frac{3}{4}''$) square. It is so thin it almost crumbles at touch and so wispy that it floats on the air like a feather.

Silver leaf is slightly heavier than gold and therefore somewhat easier to handle but, unlike gold, it tarnishes and so must be varnished immediately following application.

Precious leaf can be bought either in a book in which each leaf is attached to tissue paper backing (this is called transfer leaf) or in a book of detached sheets (loose leaf). In either case each book contains 25 leaves and a book should cover about 45cm square ($1\frac{1}{2}$ feet square).

Transfer leaf is applied rather like Letraset by pressing it against the surface and rubbing, and is especially useful for outdoor gilding since it will not blow about. Transfer leaf is not advisable for fine finishes since it may result in gaps where sticking is uneven.

Left: this old clock, retrieved from a junk shop has been elegantly rejuvenated by Michael Baker.

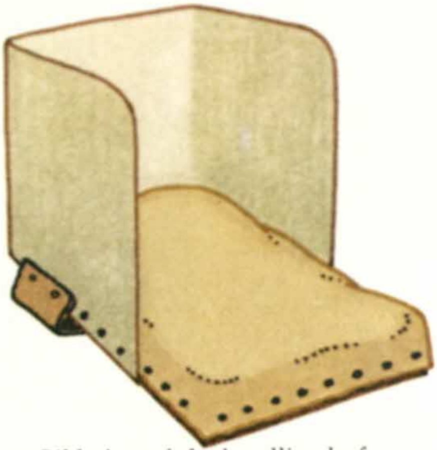
Gilding tools

Simple, though special, tools are required to handle leaf and these can be purchased at art supply shops or improvised at home.

A gilder's knife is something like a kitchen knife and it often has a diagonal shape at the end. The cutting edge must be kept sharp enough to cut the leaf cleanly and the surface must always be kept free from grease and dirt. This can be done by wiping the blade with cotton wool and methylated spirit, then with emery paper.

Although it is better to have a proper knife, it is possible to use an old steel kitchen knife. You can change the tip; making it diagonal if preferred.

Cush. This special cushion or palette for handling wispy gold leaf consists of a wooden base 15cm x 25cm (6″x 10″) softened by cotton padding and covered with chamois on the top and calf on the bottom (fig.1). A shield of parchment or buckram about 15cm (6″) high protects the leaf from disturbance by draughts. A leather strap is usually added to the base so the gilder can hold the cush in his left hand while cutting, lifting and applying the leaf. A cush is not required for applying common or transfer leaf.



Victoria Drew

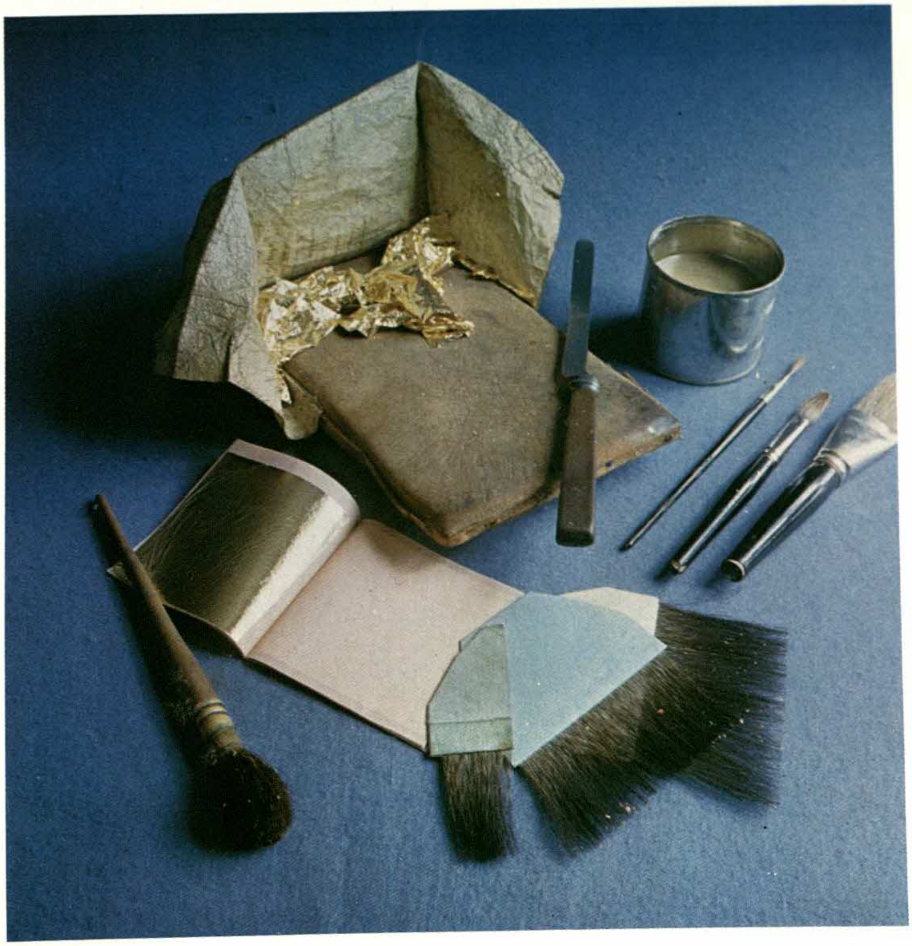
1. *Gilder's cush for handling leaf.*

Gilder's tip. This is a thin, flat short-handled brush used to lay precious loose leaf and it can be purchased along with other gilding equipment. Experienced gilders have several sizes for manipulating different sizes of leaf.

Mop. A tiny mop is used for patting the leaf into position.

Brushes. You will need a selection of brushes for applying undercoating to objects. Ox-hair brushes are particularly useful for this.

Gilder's tools include cush, tips, knife, paintbrushes and a mop or similarly shaped brush.



Geoffrey Frosh

Oil gilding

Oil gilding is a straightforward process which can be used on many different surfaces—wood, plaster, metal, paper and papier mâché—either covering them entirely in gold or highlighting edges or relief surfaces. Both carved and flat surfaces may be gilded. On a flat surface the leaf must be laid absolutely flat and smooth, whereas, on a carved surface the leaf can crinkle slightly without marring the result.

Oil gilding is also recommended for exterior gilding since it will withstand weather.

Remember that leaf laid by oil gilding cannot be burnished because of the undercoat and will produce a matt or soft glow rather than a polished finish.

Preparation of the surface

This is one of the most important steps in the gilding process and attention to its thoroughness cannot be over emphasized. The smoother the surface, the better the luminosity of the gold finish.

First, clean the surface thoroughly. If it has been previously painted, make sure any flaking paint or plaster is removed.

On new materials always prime the surface with the appropriate primer to ensure adhesion of the new finish.

Where there are imperfections such as unevenness caused by flaking, fill in the chips to make a smooth surface using, for example, putty on wood, Polyfilla on plaster.

Painted or varnished surfaces should be rubbed over with alcohol and sanded with fine glasspaper. Newly filled areas should be shellacked or primed.

New wood should be sanded and shellacked also, while plaster should be given two coats of shellac.

Metal must be stripped and coated with metal oil primer.

If parcel gilt is to be applied to a painted piece, paint the entire surface before gilding.

Applying size

Oil or gold size with different drying times is available at art suppliers. In a dust-free atmosphere paint the size on the object to be gilded—or part of it if it is a big area—with an ox-hair brush. Lay a fine even coat and re-stroke the surface without applying more size to the brush in order to ensure complete coverage. The leaf will not hold at uncovered spots.

Remember to confine the area sized to an area which can be covered in one session with leaf.

A tall object is sized from the bottom up so that particles will not fall on any exposed sized surface.

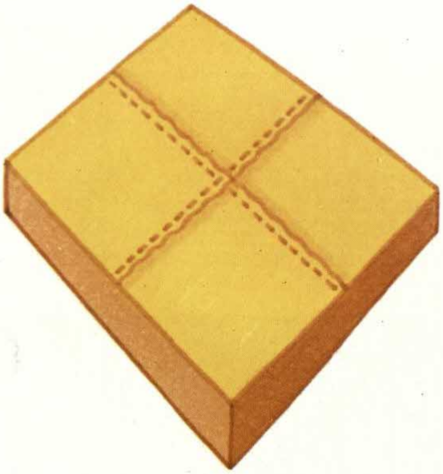
Size a four-sided object on opposite sides first. If there is a lid, size the inside closing edge first. Do the sides next and finally the top.

When the size is ready you should be able to touch it and feel a slight resistance when you remove your finger. If it is sticky it is too wet and if there is no resistance then it is too hard.

Applying leaf

Loose leaf and transfer leaf are each applied by slightly different methods but all leaf is laid down in the same overlapping pattern.

Start at the top left if you are right handed and overlay by about 2mm ($\frac{1}{8}''$) (fig.2). Note that overlaps must be made both vertically and horizontally. Although each piece of leaf can be cut to desired size, do not worry about small gaps that occur when you are laying it. These are put right later on by 'skewing'.



Victoria Drew

2. *Leaf should overlap slightly.*

Kim Sayer

Left: carved wooden squirrel is enriched by a layer of fine gold leaf.

Skewings are tiny fragments of leaf that crumble from the edges of the overlaps and these must be 'skewed' or brushed away with a fine ox-hair or camel-hair brush. Always sweep in the direction of the overlaps not against them, which would cause them to lift up.

The faults which are less than about 5mm ($\frac{1}{4}''$) in size can have particles brushed into them and pressed down with a finger. Excess particles can be collected in an improvised paper cone. The whole surface is tapped down with a mop and smoothed over lightly with cotton wool.

Transfer and common leaf are the easiest materials to begin laying. Common leaf can be worked with your fingers.

Cut sheets and attached leaves into strips or squares suitable for covering the particular surface, then press each leaf to the surface, gold side up.

Press with cotton wool or a mop and remove the tissue backing. The leaf should remain in place.

Loose leaf is a more complex material to lay and requires all the tools mentioned. However, once the process has been learned it gives superior results.

☐ Turn several gold leaves out on to your cush (A). Bring the gold forward on your knife (B) and blow it gently until it flattens out (C).

☐ Cut to required size with your knife, making sure it is slicing through cleanly (D).

☐ Rub the gilder's tip down your cheek to pick up static electricity and place the tip over the piece of gold you wish to pick up (E).

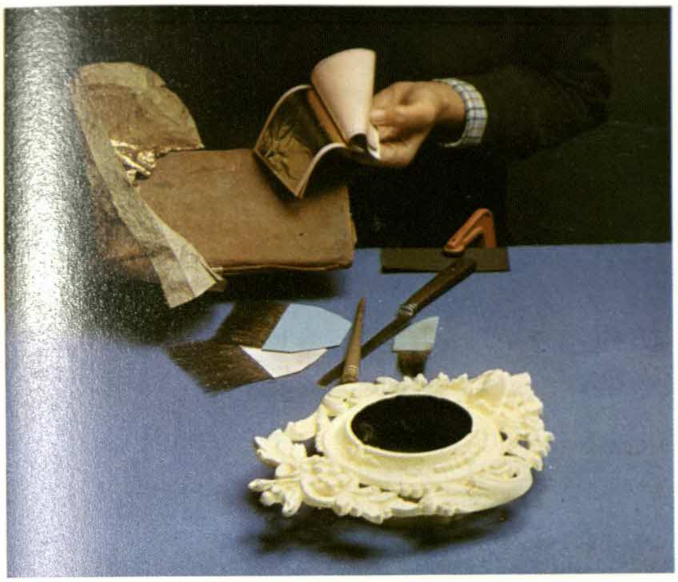
☐ Lay it in place on the oil-sized surface (F) and tap it down with the mop.

It will help enormously to get into a regular routine, and always remember to avoid touching all oiled surfaces with your hands or tools.

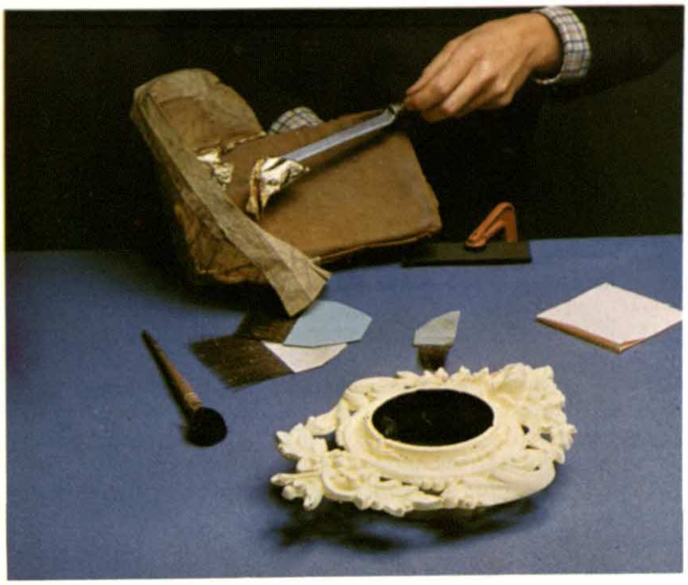
☐ After you have laid your surface, rub it over with the mop and then with cotton wool to remove all loose particles of gold leaf.

Carved surfaces. If you are laying carved surfaces lay the relief areas first and then the recesses. Skew the crevices.

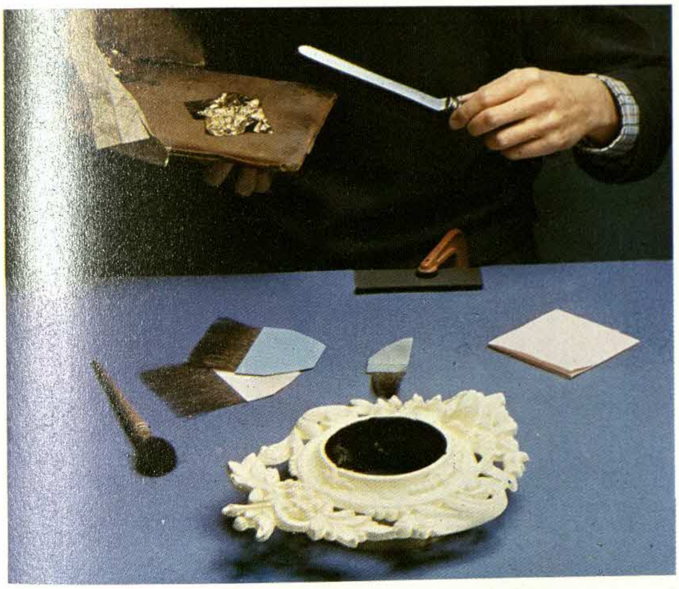
Protective coating. Allow your gilt surface to dry for a couple of days or more. Then you can give it additional protection with fixatives such as polyurethane varnish. Do not apply the varnish too thickly, however, and brush it out carefully. Several thin coats are superior to one thick one.



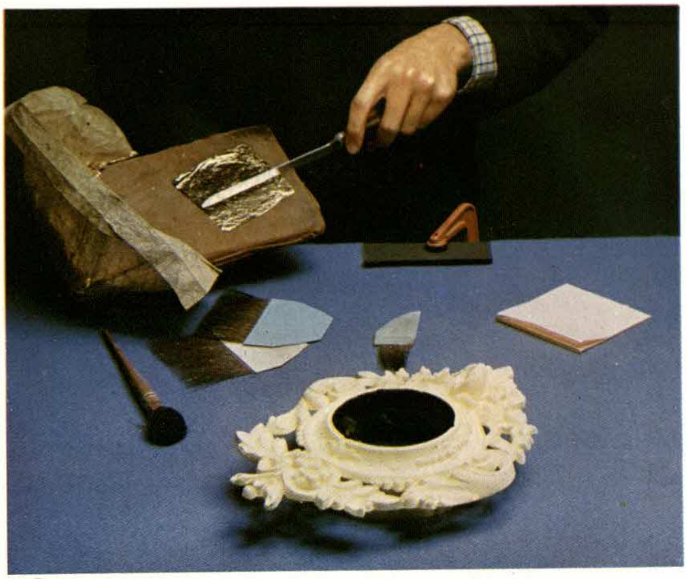
A. *To lay loose leaf, open book and turn leaf on to cush.*



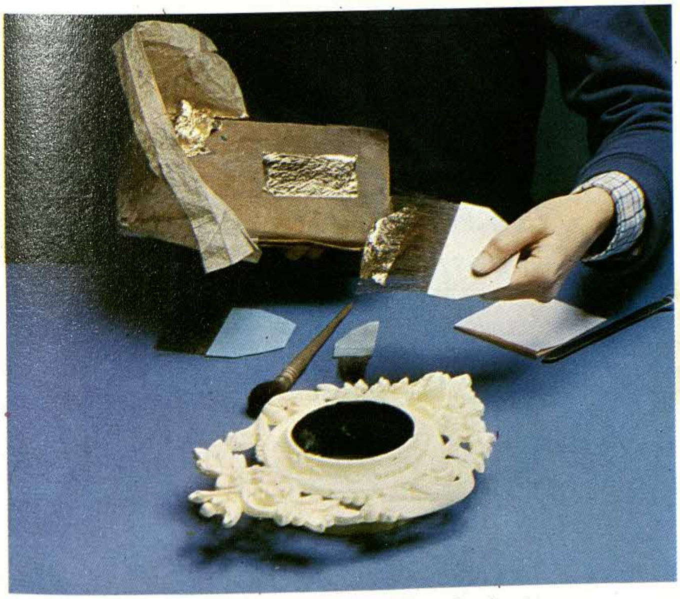
B. *Bring the gold forward with your knife.*



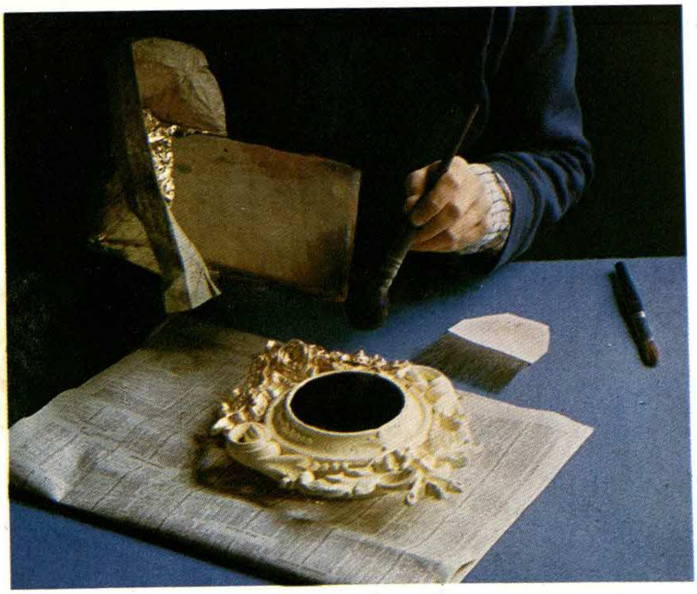
C. *Blow gently until leaf flattens out.*



D. *Cut leaf to proper size with gilder's knife.*



E. *Rub tip against face first then pick up leaf.*



F. *Place leaf on sized surface and tap down.*

Geoffrey Frosh

Drawing the human figure

Design know-how 59

This chapter shows you how to draw the human body using the size of the head to determine the proportions of the rest of the figure. Use these proportions when making a drawing of the human figure or for any representation of the figure in collage, painting, embroidery, sculpture, or when making dolls or puppets.

First of all draw the head according to instructions given in the previous Design know-how chapter.

Draw a vertical line down from the chin and divide it into seven sections, each the same height as the head. Letter each section (fig.1). This gives you the height of the figure which should be eight times the size of the head for a classically proportioned figure.

Mark the shoulder line slightly more than half way up section A, the hip line along the line dividing sections C and D. The waist should be drawn slightly less than a quarter of the way up section B. Join up shoulders, waist and hips to form torso (fig.2).

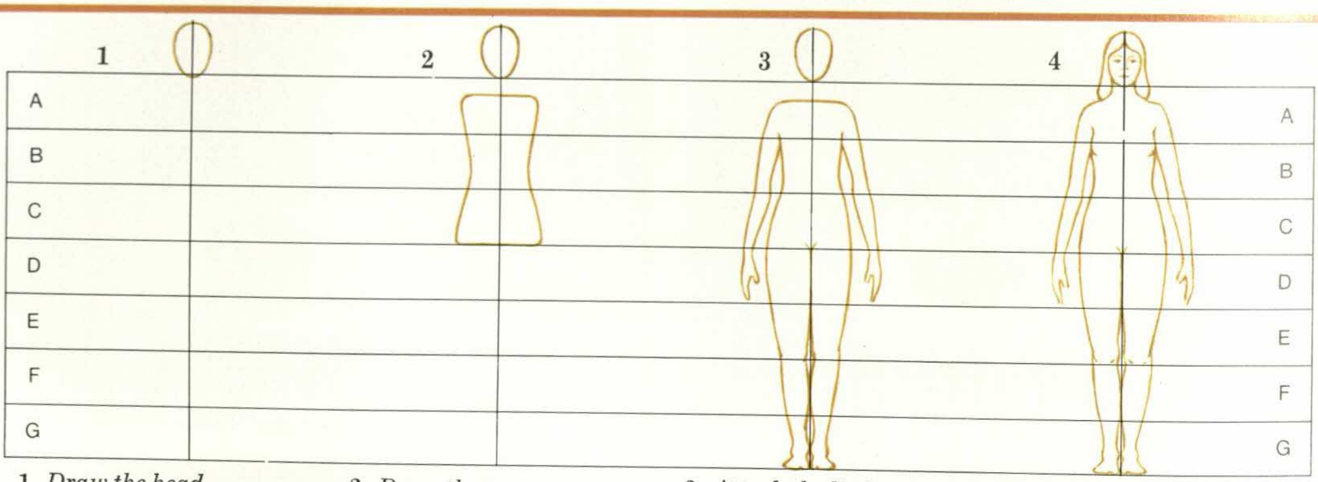
Next put in the arms and legs (fig.3). The elbows should come at waist level and the tips of the fingers on the line dividing sections D and E.

The knees should come on the line dividing sections E and F, and the tips of the toes at the bottom of section G.

Fill in the neck to join head and shoulders and you have completed a perfectly proportioned figure (fig.4).

Special effects. Proportions can be changed when drawing certain types of figures. For example, if you want to draw a very tall man, make his height equal to nine or ten times the height of his head, or if you want to draw a child, make the height equal to only three or four times the height of the head (fig.5). The older the child, the nearer it will approach adult proportions.

Build. Now you have the linear proportions for the human form, you must decide on build. A person with a medium build will have hips and shoulders equal to about two and a half widths of the head. Make the shoulders, hips and limbs wider for heavy builds and narrower for light builds (fig.6). The relationship between widths of hips and shoulders will change depending on whether you are drawing a male or female figure. The hips on a man will generally be narrower than the shoulders, whereas the hips on a woman will be the same as or wider than the shoulders.



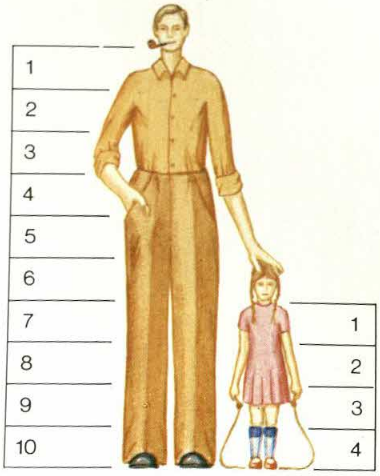
1. *Draw the head.*

2. *Draw the torso.*

3. *Attach the limbs.*

4. *Draw in the details.*

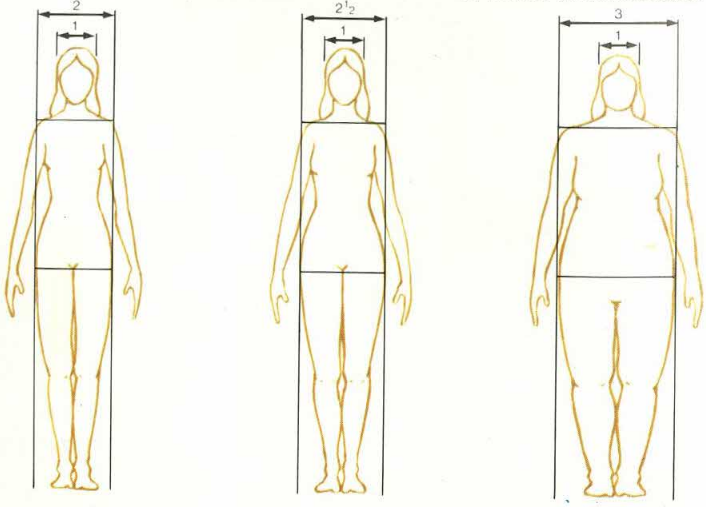
5



Paul Williams

5. *Sometimes proportions change.*

6



6. *Vary width of hip and shoulder according to build.*

Creative ideas 59

'Antique' boxes

Simple tins or wooden boxes decorated with découpage or punched patterns have an old-fashioned appeal as pretty gifts when filled with dainty sweets or potpourri.

For the rose box you will need:

A round wooden or tin box.
Clear, general-purpose glue such as Bostik 1.
Assortment of floral scrap reliefs or floral wrapping paper.
Silver glitter, clear varnish and very fine glasspaper.

If you use wrapping paper, cut out the flowers and leaves with a pair of curved cuticle scissors using them with the curve away from the cutting line.

Smear glue evenly on the back of the cut-outs and begin to cover the box with the flowers. On round boxes you may have to make tiny tucks in the paper as you fold the flowers over the lid edge.

Try not to build up too thick a layer around the rim of the box or the lid may no longer fit.

Leave to dry completely, then apply a thin, even coat of clear varnish. Leave this to dry in a dust-free place. Then, with the glasspaper, gently smooth over the varnish taking care not to harm the paper. Apply as many coats of varnish as you require to give a smooth surface.

Finally, trace along a few petals with a thin line of glue. Sprinkle with glitter, leave to dry and gently brush away the excess.

For the star box you will need:

Metal tin with lid.
Fine steel wool.
Hammer and nail.
Silver paint and small bristle brush.
Piece of wood to fit snugly in tin to give support while punching the pattern.

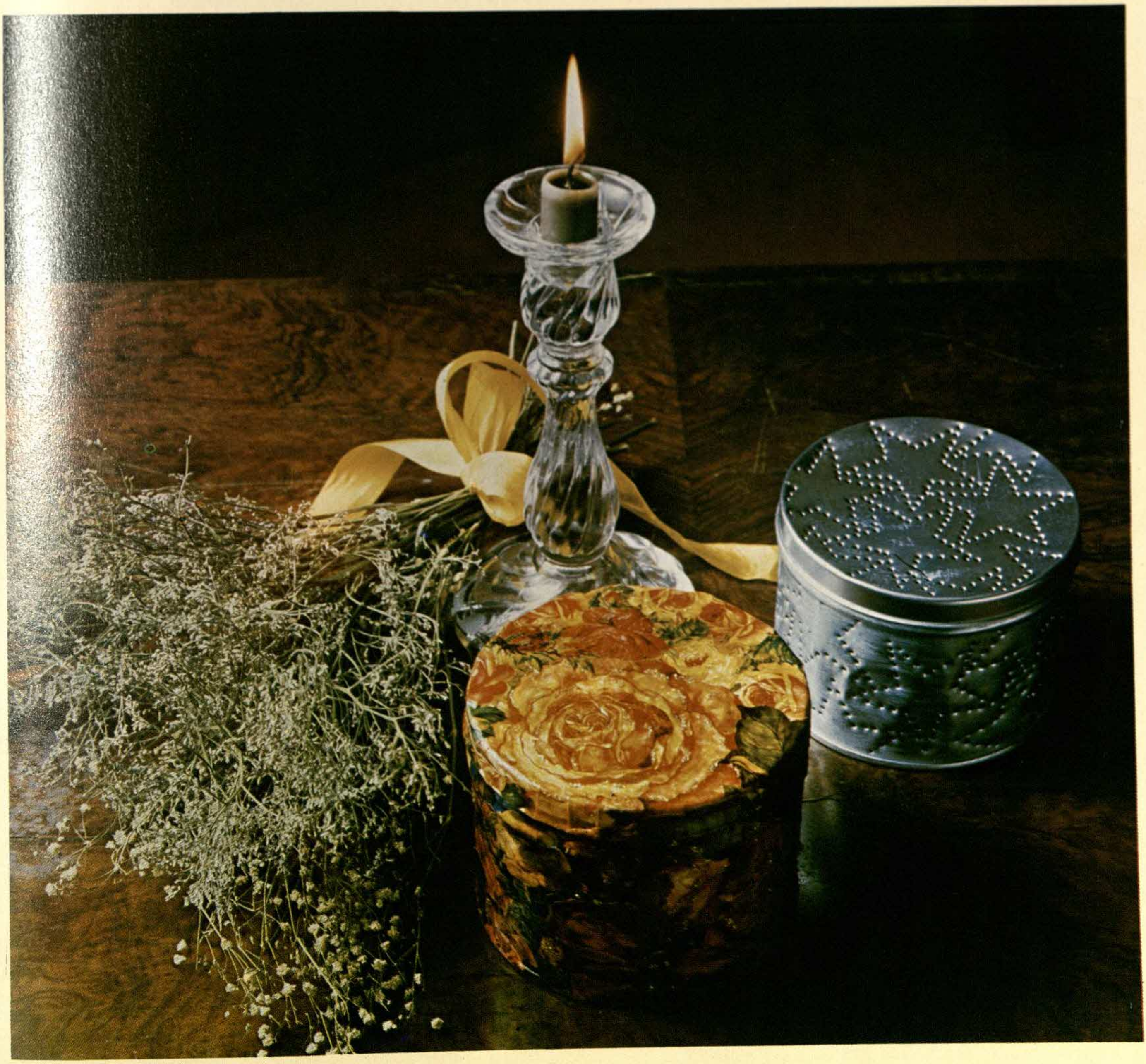
Go over the tin with steel wool removing any painted design.

Make a star template from card and trace round the shape on to the tin.

Punch the design with the nail and hammer, supporting the tin inside with the block of wood (see Metal chapter 7, page 442).

Dip the brush lightly in the paint and brush it quickly over the box. Any paint that collects in the holes can be removed with a toothpick.

There are many variations on making 'antique' boxes—here are just two.



Camera Press

Decorating with découpage

Paper 41

The word découpage means 'cut out' and the craft is concerned with decorating objects with cut-out paper prints or illustrations, and then varnishing them. Originally the idea was to 'sink' the print under many coats of varnish so that the print would look as though it had been inlaid in the surface of the object. This is very effective for wooden objects, such as boxes or even chairs. However, you can also decorate glass and metal objects with découpage or cover a large area such as a floor or wall entirely with prints, and in these cases the prints need not be sunk. In any case modern varnishes have lessened the number of coats necessary making découpage inexpensive and fun. All you need to be able to create unusual and attractive pieces is time and patience.

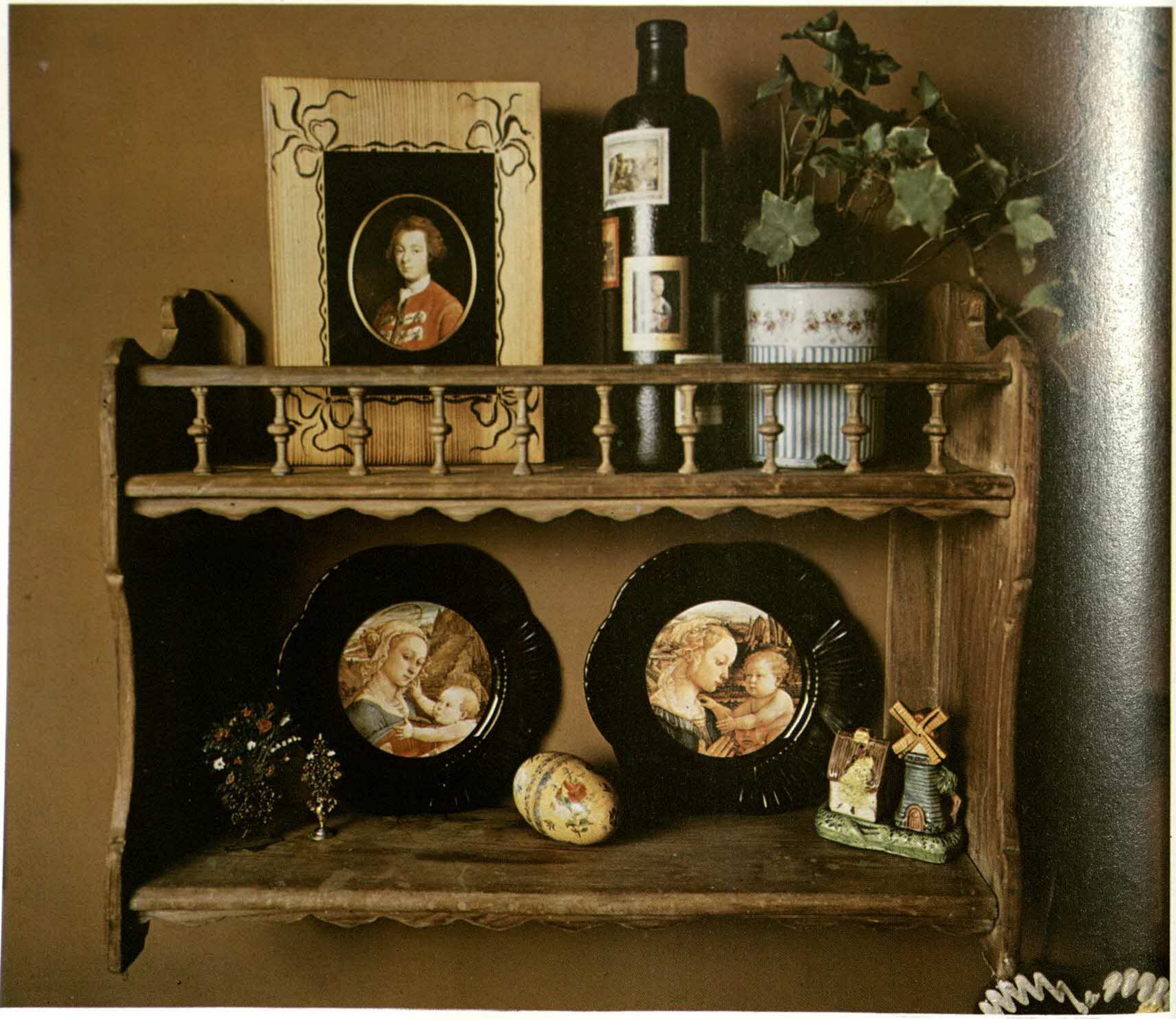
Below: these découpage objects were all designed by Alan Wheeler.

Découpage was a popular pastime in 18th-century France, when ladies of the court used to amuse themselves by copying the lacquered Chinese and Japanese furniture that was all the rage at the time. Découpage was known as 'poor man's lacquer' and, in Britain, 'Japanning'.

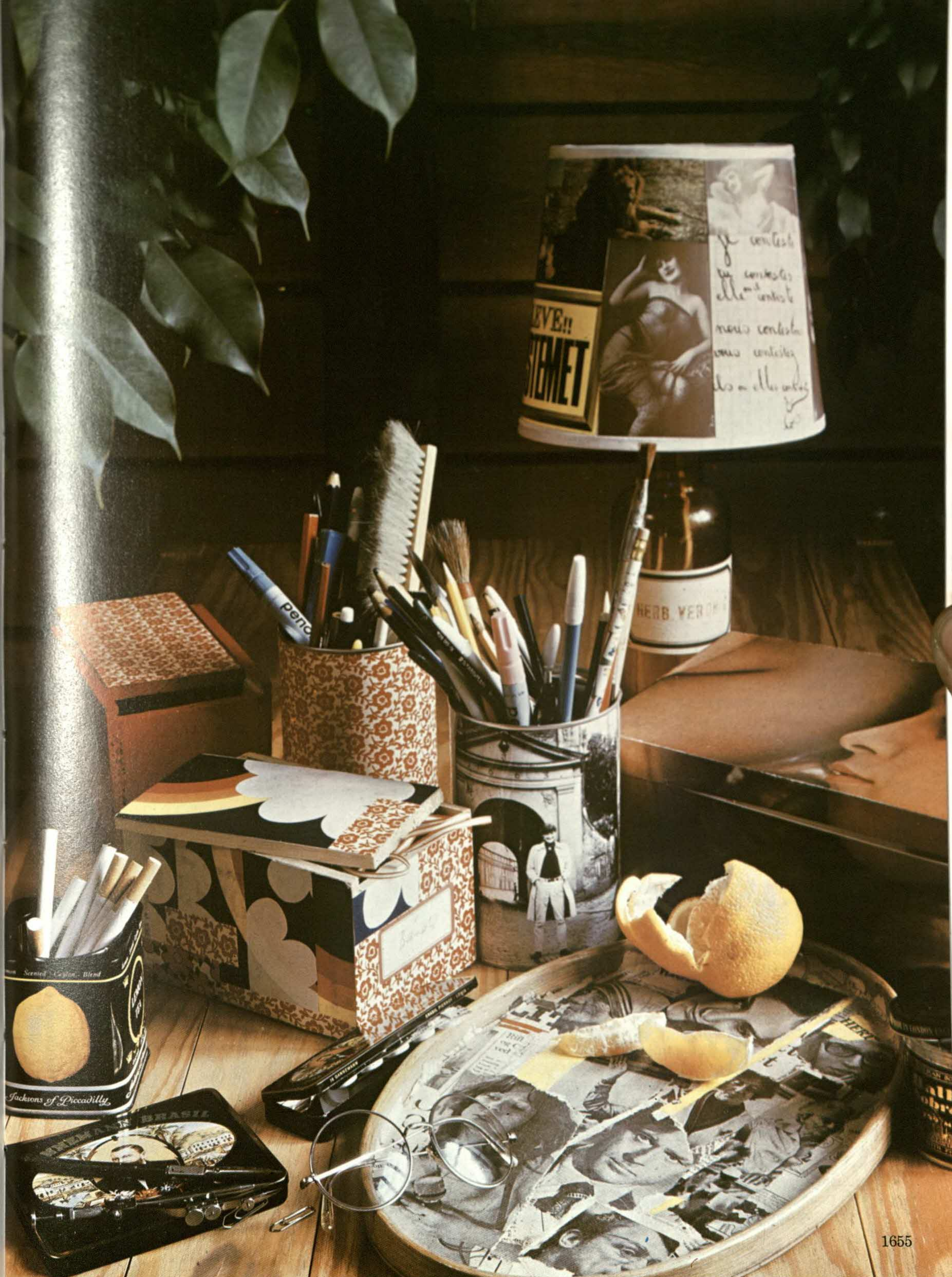
Early in this century the craft of découpage came into vogue again, this time in America where it is still very popular. Découpage studios sell a variety of prints, varnishes and finishes many of which are exported to specialist shops and art shops in other parts of the world. Even if you don't have access to these découpage materials you can buy suitable alternatives at DIY and craft shops.

In this chapter you will see the basic method of applying découpage to a

Right: objects, which might otherwise not be worth a second glance, can be transformed with découpage.



Liz Whiting


EVE!!
STEMET
je conteste
tu contestes
il et elle conteste
nous contestons
vous contestez
ils et elles contestent
HERB. VERON
Jacksons of Piccadilly
BRASIL

wooden box, and in the next you will see how to plan and decorate a large screen, and how to decorate glass and metal.

Choosing decorative prints

There are innumerable sources for attractive prints and illustrations—art shops, junk shops, sales, stationers and museums are all possibilities. Almost any prints are suitable, from catalogues or old books, to posters, wallpapers and wrapping papers, but do remember that if they are thick card or paper they will be much more difficult to sink. Try to choose prints on thin paper, and to use prints of similar thickness on one object.

Christmas cards and postcards can be used if you soak them in water and peel off the thick backing paper. If it will not easily peel off, you may be able to rub the backing off in tiny pellets. Don't risk soaking your favourite card as you may destroy it!

If you have a plain black and white print you can colour it with water colours, felt-tipped pen or coloured pencils. Do this before cutting it out.

Materials

The main materials used in découpage are the prints, sealer, adhesive and varnish. There is a lot of scope for using a variety of products and you should make sure that they are compatible—that, for example, the varnish you have chosen will not dissolve the sealer you have used. If in doubt, test a small area.

Sealer. Prints and illustrations must be sealed to prevent glue or varnish from seeping into them. You should do this before cutting them out. You can use a commercial sealer such as Treasure Sealer, Dufix, or a white PVA sealer. If these are not available you can make your own sealer by mixing equal parts of white spirit and varnish. Magazine illustrations have to be sealed on the reverse side as well as the upper surface, so that the print does not show through. Some magazines are printed on such thin paper that even sealing may not entirely prevent heavy print from showing. You can test for this by sealing a trial piece first.

Adhesive. The type of adhesive you choose depends on the surface of the object you are decorating. For wood, a PVA adhesive such as Evo-Stik can be used. If the surface is metal or glass you should use a general-purpose glue such as UHU. Wallpaper paste is an alternative which has the advantage of making the print easy to slide into position on the object.

Varnish. Almost any varnish is suitable for découpage, although traditional varnishes take longer to dry than polyurethane varnishes and this can be very important when you have to apply several layers and allow each one to dry thoroughly. Both types give prints a yellowish tinge, which makes it difficult to retain a clear blue or green base colour.

There are also a number of specialized découpage varnishes such as Oriental Lacquer, Fun Finish and Instant Finish. These are designed for specific projects so their suitability should be carefully checked with the mail order catalogue or the shopkeeper. They have a quicker drying time than traditional varnishes, some drying in one hour rather than twenty-four hours. They also need fewer coats to achieve a good finish.

Rustin's Plastic Coating is a useful alternative to varnish as it gives a very clear finish which leaves the original colours virtually unchanged. It is sold in two parts, lacquer and hardening solution, which are mixed equally in a glass or ceramic container. Unlike varnish it works best when applied quite thickly, and it dries in about two hours at room temperature.

Decorating a wooden box

A small wooden box is a good object to start on and can be decorated in many different ways.

You will need:

Plain wooden box.
Assorted prints.
Primer and emulsion paint (optional).
Wood filler (optional).
Sealer.
Water colours, felt-tipped pens or crayons (optional).
Adhesive or wallpaper paste.
Fine sandpaper, sanding block.
Wet and dry paper.
Fine steel wool.
Wax polish and duster.
Varnish.
Pair of large scissors, pair of small scissors with curved blades; scalpel.

Preparation

Fill any holes or cracks carefully with a proprietary wood filler, then sandpaper the whole box thoroughly. Wooden surfaces can be left with their original finish or primed and painted with emulsion paint. Make sure that the base paint goes on smoothly; any

Cut out small details in the print with a scalpel since any flaws in the cutting will show through the varnish.

David Levin

The care and patience taken to decorate the box have been worthwhile, as this finished box by Alan Wheeler shows.

flaws in the basic foundation will show through the layers of varnish. You will need two coats to make a really good job of it. When choosing the basic colour remember that the type of varnish you use will affect it.

Sealing

Remember all prints should be sealed before being cut out (magazine illustrations on both sides): this stiffens them and makes them easier to cut. Paint on the sealer thinly and evenly, covering the whole print.

Cutting out

The cutting out is very important as every tiny detail will show through the varnish on the finished box. It is therefore worth taking a lot of trouble at this stage.

Cut away any white surround with the large scissors first, then cut the details with the small curved scissors. If you use the small scissors with the curve turning away from the direction you are cutting, you make a slightly bevelled edge which gives a smoother surface for the varnish. Leave any fine detail until last so that it doesn't get damaged while the rest of the design is being cut. Then cut it out carefully with a scalpel.

Sticking down

Cover the back of the print evenly with adhesive and press it down on the box with your fingers. Working from the centre outwards, smooth the print so that no air bubbles remain and no print surfaces overlap. Make sure that all the edges are properly stuck down so that varnish does not seep underneath. Wipe off excess adhesive and allow to dry.

Varnishing and sandpapering

The drying times and number of coats of varnish vary, and the point at which you decide the object is finished—or even whether you wish to sink the design—is obviously a matter of personal taste. Broadly, a traditional or polyurethane varnish will need up to 20 coats to make an embedded finish, while a specialized product will only need up to eight coats and a plastic coating about six. If you are using a traditional or polyurethane varnish you should sandpaper between all coats following the tenth coat since sanding at an earlier stage could damage the prints. The special découpage products and the plastic coatings can be sandpapered between every coat.

Clean the surface of the box first to get rid of dust and fluff. Brush on the varnish evenly, taking care to catch all runs before leaving it to dry. Work in a good light so that you can see any runs. If they do occur, allow the varnish to dry and then sandpaper the uneven spots before putting on the next coat.

When sanding the surface between coats, use fine sandpaper wrapped round a sanding block. For a very fine finish, wet and dry paper is the best to use. Wash all surfaces with soap, rinse and dry thoroughly before the next coat of varnish.

Finally, for a really glowing finish, and to get rid of sanding and brush marks, rub down the surface with wet and dry paper and then with fine steel wool. Wash, rinse and dry, then wax polish the box until it shines.

Making a flat casserole

A casserole is a dish in which food is stewed or braised and from which it can be served directly.

Design

When considering design, in terms of a casserole or stew-pot, it is essential always to bear in mind the intended function of the pot.

The shape of the pot is the basic consideration. Since this cooking pot is traditionally taken from oven to table it should be attractive as well as functional. Its purpose is not only to contain but also to enhance the appeal of the food. For this reason a simple shape is usually the most effective.

Remember that the pot must have a stable base so that it can be set down safely and it must be easy to pick up with a thick cloth or oven gloves when it is full of hot food. Remember also that it has to be washed up and should not be designed with grooves or corners which trap food or grease. Nor should it have applied decoration which is fragile, as well as hard to clean.

The size is also very important. It is possible to make any size of casserole, from a small individual one to a large family-sized pot, but bear in mind the size of your oven. Think in terms of a small, a medium and a large size, rather than trying to design only one size to suit all needs.

The lid must fit snugly to avoid moisture loss. It is always possible to prop a lid open if necessary, but not very much can be done about a badly fitting lid, which may well be the cause of a dry and glutinous stew. The lid must also fit firmly in a good seat or gulley, and be held in place with a proper flange, so that it does not slip off if the pot is tilted slightly.

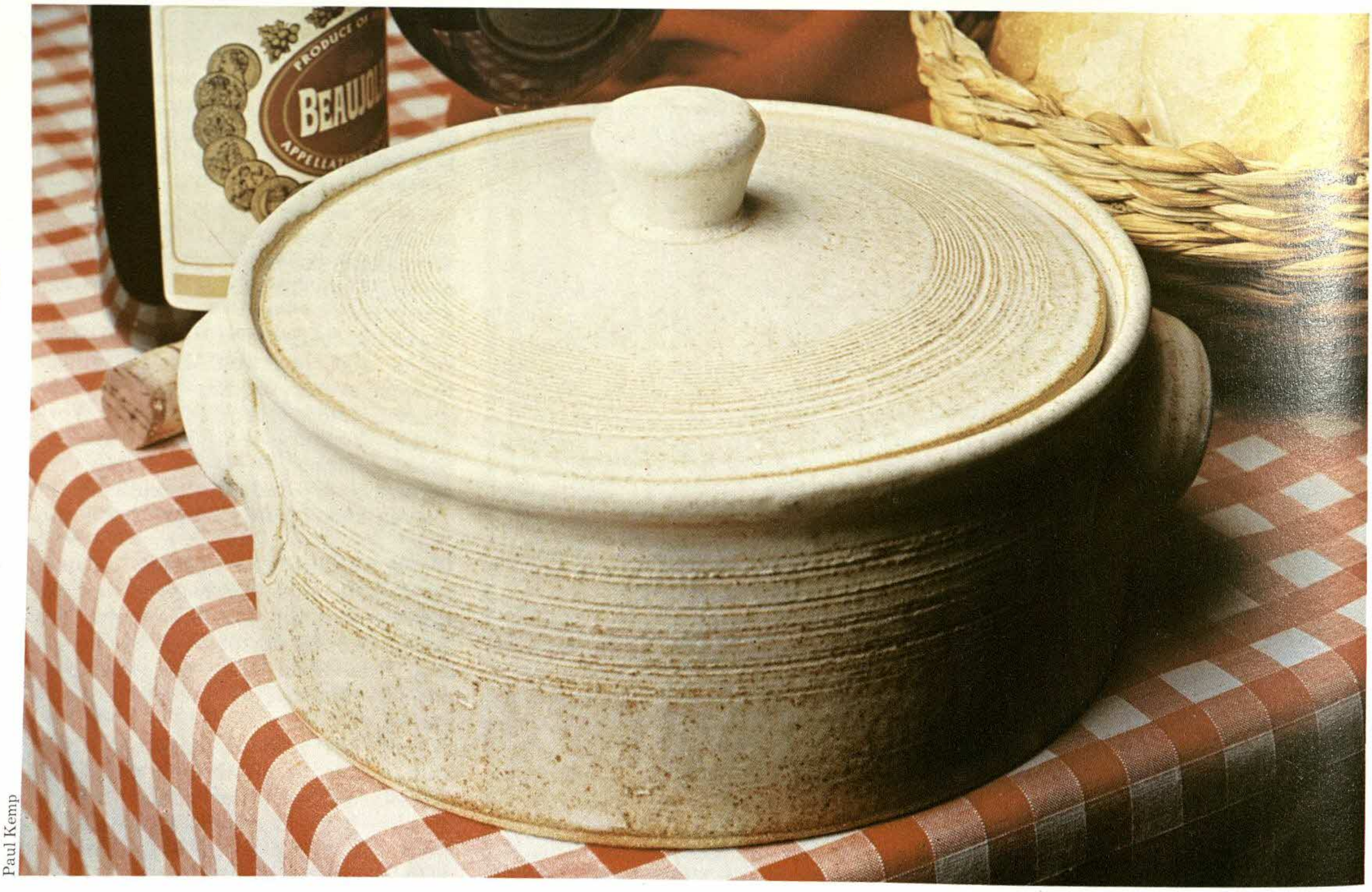
Handles and knobs need careful thought. When in doubt, it is best to err on the side of making them too large. Good-sized handles which offer a firm grip on a full, and often heavy, casserole are essential on most shapes. Likewise, the knob or handle on the lid must be easy to pick up when hot. Often a newly applied handle or knob looks sufficiently large and it is only when it has been fired, and has contracted, and has been covered with a smooth glaze, that it is found to be too small.

Thermal shock

Thermal shock is the term used to describe the effect of sudden increases or decreases in heat—factors which are particularly relevant to casseroles which must be put into and taken out of hot ovens.

It is easy to assume that because a pot has been fired to a much higher temperature in the kiln than any temperature achieved in an oven, it will be suitable for cooking purposes. Alas, this does not necessarily follow. The slow heating and cooling rate of the kiln protects the pots from rapid changes in temperature and is a far cry from the almost brutal conditions of the average cooking oven.

The casserole discussed in this chapter was designed by Emmanuel Cooper.



Paul Kemp

Shock resistance. There are two basic ways to increase thermal shock resistance.

The first is to use a suitable shape—that is, one which has no sharp corners but is comprised instead of gentle, strong curves. It is no accident that traditional African cooking pots all have rounded bases. These forms are physically able to withstand greater thermal shock than those with corners. It is important, too, to construct the walls and base of an even thickness throughout. Variations in thickness cause undue stress and any thinner sections are particularly prone to cracking.

Secondly, it is important to consider the clay body. Basically, when fired, this must not become too vitrified—that is, too glass-like. If your standard clay body is highly vitrified this can be lessened by the addition of a refractory grog (about 10%) or a similar percentage of refractory fire-clay. This will make it slightly absorbent so that when fired it will withstand thermal shock without much difficulty.

The flat casserole

This particular casserole is designed to hold about 1.5 litres (3 pints) and measures 22cm (9″) across the top. The lid has a knob thrown on after it has been turned, and two strap handles are attached to the sides. The casserole has a turned foot (see Clay chapter 36, page 1570) which means that the bottom can be glazed for greater strength.

The lid sits firmly in the seating and, because the pot is fired to stoneware temperature, the lid is fired in position. This is because at stoneware temperature most clay bodies become pyroplastic—that is, they soften slightly with the effects of the heat. Therefore a lid fired in position on a pot will achieve an even snugger fit. (Because the body becomes fairly vitrified at these high temperatures, the unglazed area where the lid lies in its seating will still be easy to clean.)

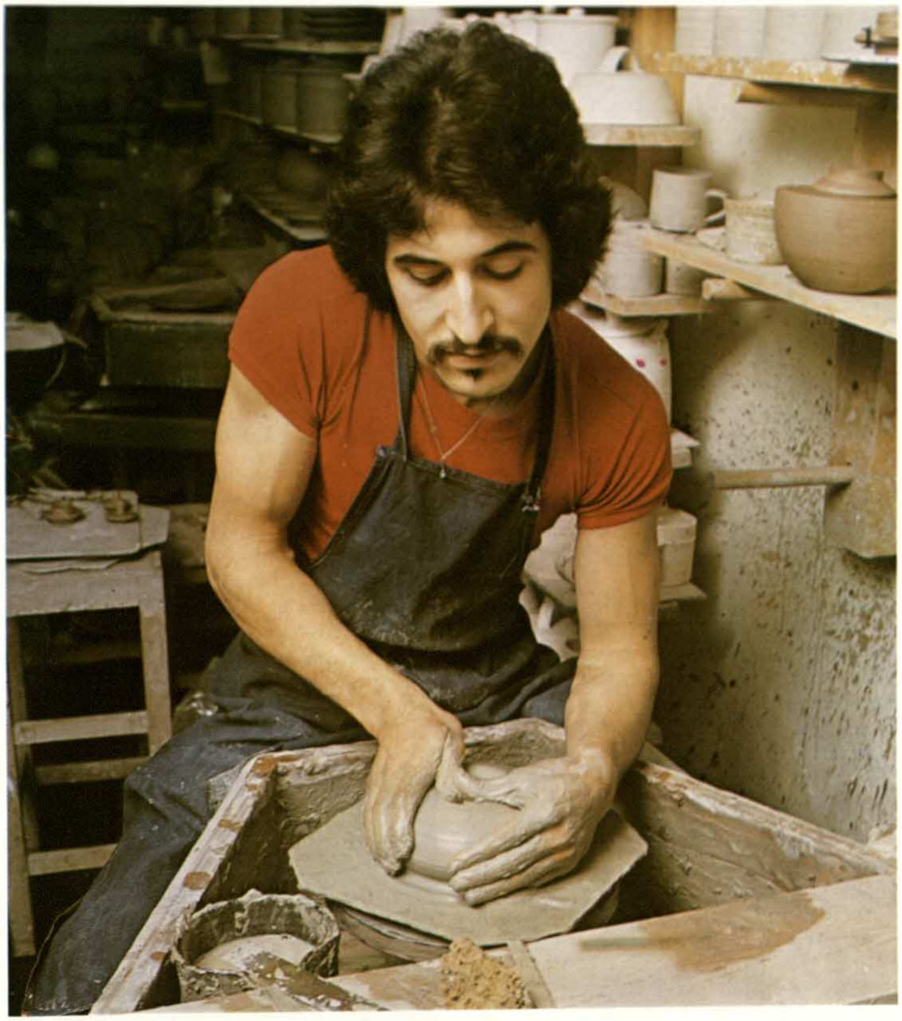
For pots fired at earthenware temperatures, the lid and body can be fired separately.

You will need:

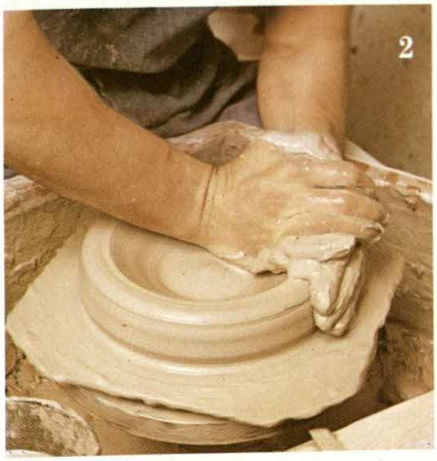
3kg (6lbs) prepared throwing clay.
2 batts.
Clay to fix the batt to the wheel.
Bowl of water.
Sponge.
Cutting wire.
Callipers.
Pointed wooden tool.
Small strip of chamois leather.
A comb for the decoration.

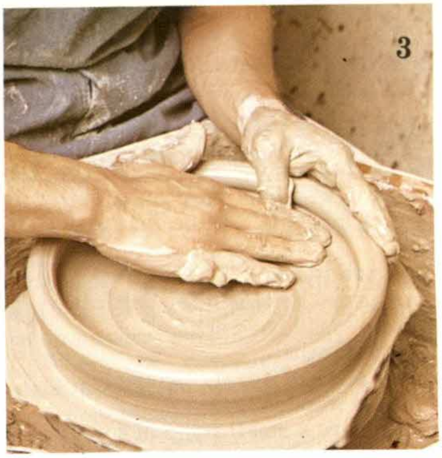
☐ Fix the batt to the wheelhead as described in Clay chapter 35, page 1545.

☐ Knock 2kg (4lbs) of the clay into an even ball.



☐ With the wheel revolving at a good speed, centre the clay as usual, but make the first movement one which presses the clay firmly on to the batt rather than one which tends to force it upwards (fig.1).





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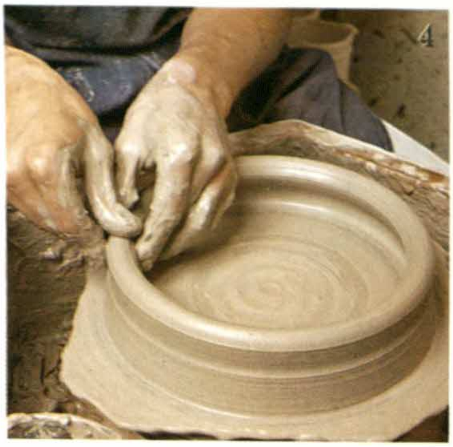
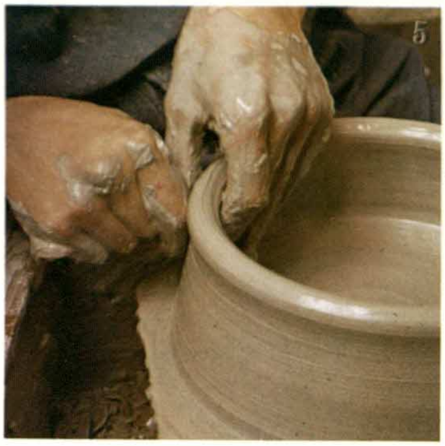
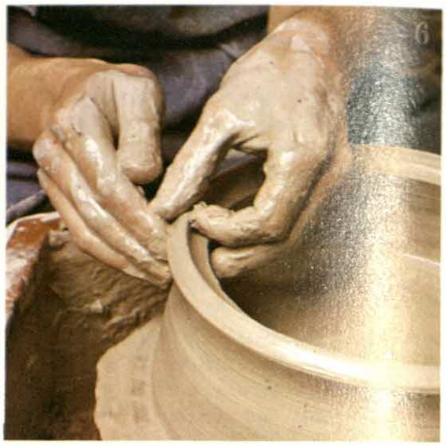
☐ When the clay is centred, open it out by pressing it in the centre with the side and the heel of the right hand, with a movement which forces the clay into a ridge around the edges. Use the left hand to support the clay on the outside to prevent it from opening out wider than the shape required (fig.2). Press the clay outwards and not upwards.

At this stage, leave a thickness of about 2cm ($\frac{3}{4}$″) for the base. This may seem very thick, but as you proceed to make the casserole much of the surplus will disappear. Avoid leaving any pools of water in the base because these have a weakening effect. Mop them up with the sponge.

☐ Complete the opening up of the base, gently curve corners on inside (fig.3).







☐ Bring up the walls slightly, ensuring that there is a good-sized flat roll of clay left at the rim (fig.4) from which the seating for the lid can be made in due course.

☐ Return to the base, and compress it by moving the flat part of the fingers across from the middle to the outside. The aim is not so much to move the clay outwards but to compress it. This will strengthen the base and thereby prevent warping.

☐ Finish off the base with the finger-tips, never with a sponge. A sponge brings out the grog and leaves a rough surface.

☐ Continue to bring the walls up at a medium slow wheel speed, always ensuring that the roll for the seating is left at the top (fig.5). Leave the walls leaning very slightly inwards. This helps to combat their tendency to flare outwards as a result of the centrifugal force.

To make the seating for the lid, hold the wall on the outside with the fingers of the right hand and gently push the index finger of the left hand into the roll at the edge (fig.6).

Keep the edge of the rim slightly

The lid

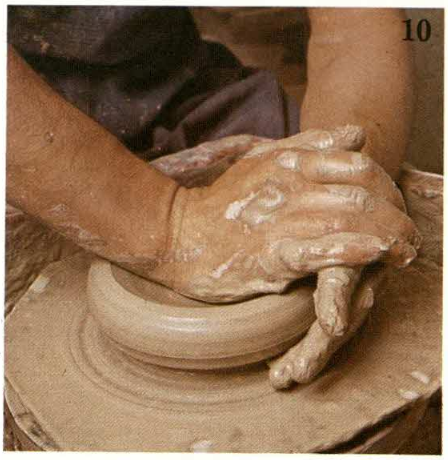
☐ Measure the opening of the pot with the callipers so that the lid can be made to fit.

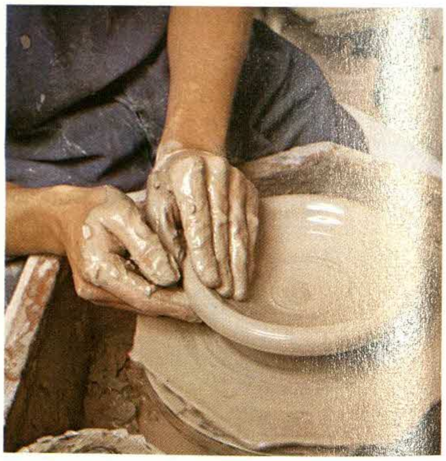
☐ Fix the batt on to the wheelhead as described in Clay chapter 35, page 1545.

☐ Centre the remaining 1kg (2lbs) of clay in the usual way.

☐ Use the heel of the right hand to open up the clay as described for the body, but this time work with a base of about 13cm (5″). As you work, cut in under the clay with the side of the supporting hand (fig.10).

☐ Gradually throw an open bowl shape, with thickish walls. Leave an extra thickness at the rim to give the





The knob

Remember that if you make this too small it will look silly on a casserole of this size and will be impractical in use.

You will need:

The turned lid at leather-hard stage.
Needle stuck in a cork.
Old toothbrush.
Small piece of soft throwing clay.
Pointed wooden tool.

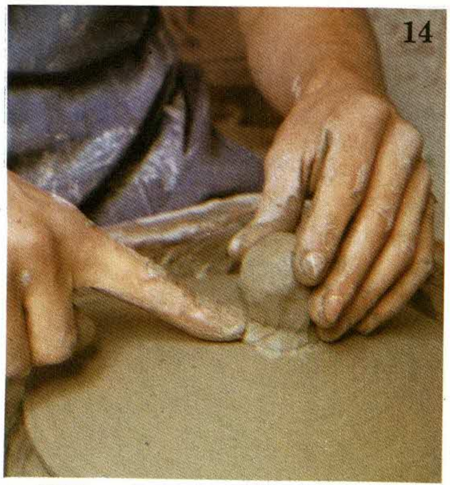
☐ Prepare a small lump of soft throwing clay about the size of a golf ball.

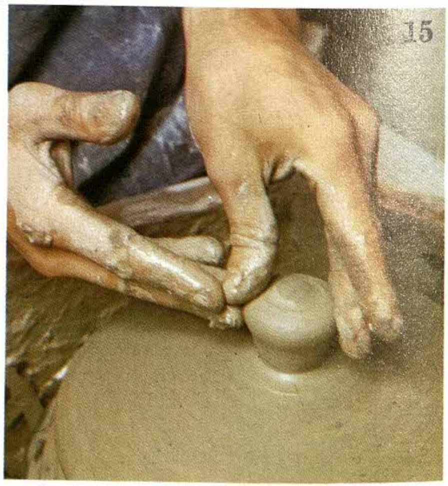
☐ Score the centre of the top of the lid with the needle.

☐ Place lid on chuck (see Clay chapter 36, page 1570) on the wheelhead.

☐ Use the old toothbrush to cover with slip the scored area on the lid and the base of the lump of clay.

☐ Press the lump of clay on to the scored centre of the lid, smoothing the join (fig.14).

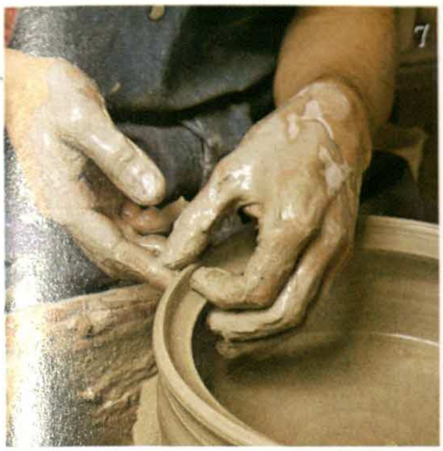




☐ With a fast wheelhead speed and a minimum of water, centre the clay to form the knob.

☐ Throw the knob on the lid, using the finger-tips to give it a good-sized undercut so that it will afford a firm grip when the surface is glazed and the lid is hot from the oven (fig.15).

☐ If necessary, use the wooden tool to sharpen up the shape.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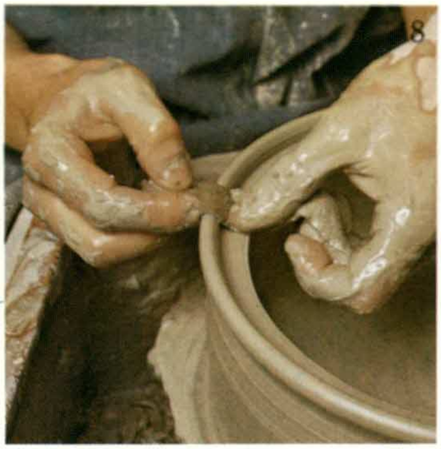
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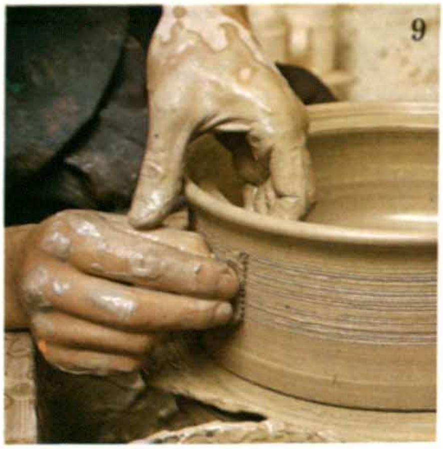
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thicker than the wall to give it greater strength and a more defined look.

☐ Before finishing the seating, check that the walls of the casserole are straight. If they are not, use light pressure to straighten them.

☐ Flatten the lid seating by holding the flat edge of the nail of the index finger horizontally against it (fig.7).

☐ Finish off the rim by holding a small strip of damp chamois leather across it (fig.8).

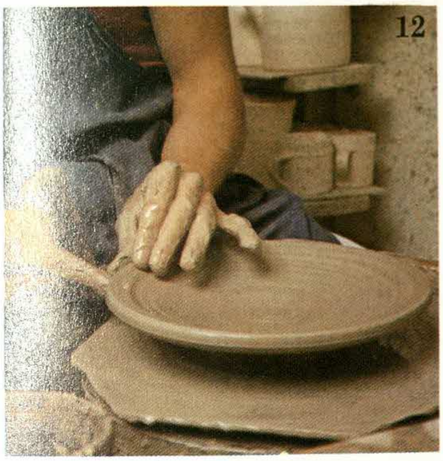
☐ Trim away any surplus clay from the base in the usual way with the point of the wooden tool.

Decorate the casserole with simple incised lines before removing it from the wheelhead.

☐ With the wheel revolving slowly, hold the comb gently against the clay surface and the crisp decoration will appear (fig.9).

☐ Push the cutting wire through between the base of the pot and the batt. If you do not, the base may stick to the batt.

☐ Push the wire through underneath the batt and lift it off the wheelhead. Do not attempt to remove the pot until it is at the leather-hard stage.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edge of the lid added strength (fig.11). A lid which is too flat in section will tend to sag in the firing, while one which is too tall and domed will take up too much space in the oven. Try to find a happy balance between the two extremes.

☐ Slow down the wheel speed and make the final throwing movement of the lid one which opens it out to the required width (fig.12). Use the callipers as your guide.

☐ When the width is correct, cut under the lid with the wire.

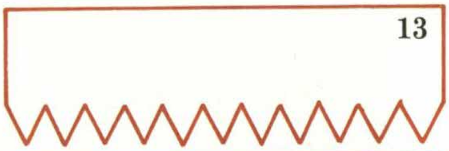
☐ Remove the batt from the wheel and allow the lid to dry out to the leather-hard stage.

Turning

When both lid and body are at the leather-hard stage, they can be turned using turning tools.

☐ Turn a foot ring on to the underneath of the body as described in Clay chapter 36, page 1570.

☐ Turn the lid, also, to finish it, not forgetting to use the comb (fig.13) to apply incised decoration to match that on the body of the casserole.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The handles

In this design, strap handles are added to the body after it has been turned.

You will need:

Well-wedged block of stiffish clay, about 15cm x 2.5cm x 2cm (6″x 1″x ¾″).

Needle in a cork.

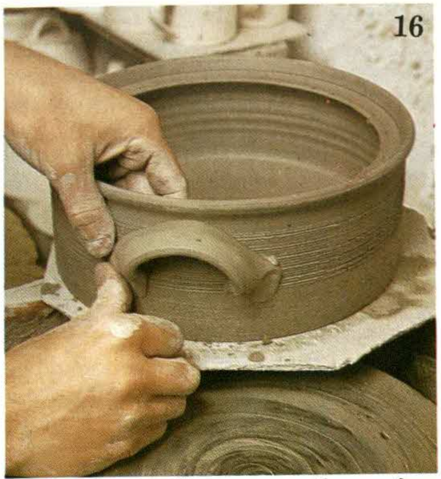
Old toothbrush.

The turned body of the casserole.

☐ Pull the handles from the block of clay as described in Clay chapter 31, page 1346. Each strip should be about 13cm (5″) long and 2cm (¾″) wide.

☐ As each strip is created, nip it off the block and put it on a wooden surface to stiffen slightly. It is wise to pull several handles in case anything goes wrong when you are fixing them to the body.

☐ Hold the slightly stiffened strips against the body of the casserole to judge the length, and then nip them off to the desired size.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☐ Use the needle to score the surface of the pot where the handles are to be joined. Use the old toothbrush to add a coating of slip to the scored areas for better adhesion.

☐ Press the ends of the handles firmly into position (fig.16). It is not necessary to press the centre of the handle against the pot because, as the clay dries, it will pull inwards and attach itself.

☐ Mould the ends of the handles against the pot so that they appear to be an integral part of the body.

☐ When the casserole is finished, place the lid in position and leave it to dry out slowly.

Keep an eye open for handles cracking off. If this happens it will probably be because the body is too dry. The answer is to stick them back into place with slip.

Finishing

The next chapter describes how to make a round stew-pot, and also discusses suitable glazes and decorating techniques for cooking pots.

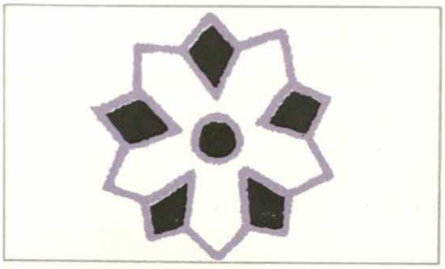
Lacy effects with cut work

Yarn — embroidery 12

Cut work is a method of creating a lacy fabric from a plain one by outlining motifs with buttonhole stitch and then throwing the motifs into relief by cutting away parts of the background fabric between the motifs.

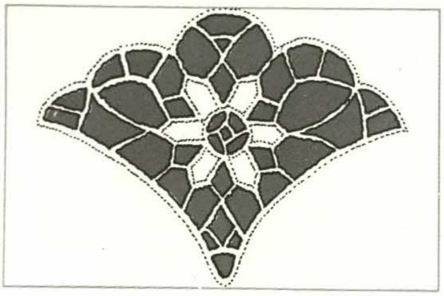
There are three main types of cut work: simple, Renaissance and Richelieu.

Simple cut work has small cut spaces which are not filled with any extra embroidery (fig.1).



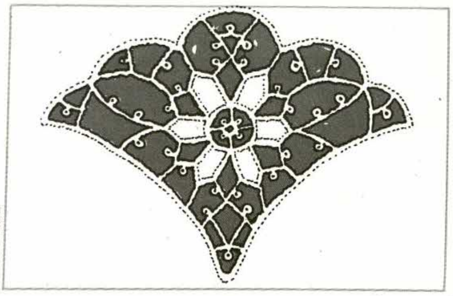
1. *Simple cut work.*

Renaissance cut work has larger cut spaces which are crossed with embroidered bars to decorate and strengthen them (fig.2).



2. *Renaissance cut work.*

Richelieu work is characterized by tiny loops, called picots, which decorate the embroidered bars (fig.3).



Coral Mula

3. *Richelieu cut work.*

Uses of cut work. All forms of cut work can be used for household linen and, if the fabric is suitable, for clothes.

Fabric and threads. Choose firm, evenly woven (not necessarily even-weave) linens, cottons, or synthetics such as Trevira, which will not fray. Fine fabrics such as muslin and some thin silks should be avoided until you become experienced.

The embroidery thread should be linen, pearl cotton, coton à broder or silk in a weight to suit the fabric. Do not use stranded cotton because the individual strands are too thin to withstand friction through wear and washing.

Needles. Fine crewel needles are suitable for simple cut work although sharps can be used for working the lacy fillings of the more intricate forms. Choose the size of needle according to the thickness of thread.

Scissors. You will need a small pair of very sharp, finely-pointed scissors for cutting away the background and, if you are planning your own design by the method given here, a pair of paper-cutting scissors.

Designs for cut work

Traditional cut work designs are nearly always floral and the main interest of the designs lies in the shape of the motifs with the cut-out spaces and their fillings.

Colour is of secondary importance and in elaborate cut work the embroidery should be worked in a thread to match the background, although toning and different-coloured threads can be effective in simple cut work as shown in the tablecloth in the photograph.

Making your own designs. All cut work, however elaborate, may be designed initially by an arrangement of cut paper shapes, either as a repetitive border or individual motifs. It is important that all the shapes should be linked together or linked to the main area of the background at various points or they will fall away when parts of the background are cut out. This linking may be done by overlapping the motifs, by joining them with stems of flowers or by the embroidered bars which are characteristic of Renaissance and Richelieu work.

Paul Kemp

Colourful tablecloth, designed by Coats, in simple cut work.

These embroidered bars may be taken straight across the spaces to be cut out or they may be curved and branched as shown in figs.2 and 3.

When you are satisfied with the placement of the drawn shapes, draw all the main outlines on a piece of paper in double lines about 3mm ($\frac{1}{8}''$) apart to act as guides for the stitching.

Transfer the design, including all bars, to the fabric using one of the methods described in Embroidery chapter 1, page 260.

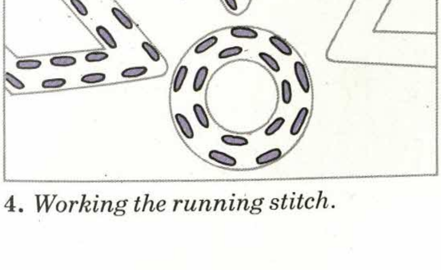
Working the embroidery

The method for working the basic embroidery is the same for all forms of cut work. The main point to remember is that all the stitching, including the embroidered bars of Renaissance and Richelieu work, is worked before the background is cut away.

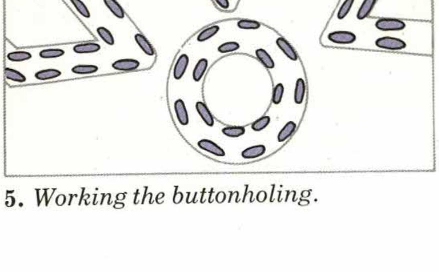
Simple cut work

Start by working two or three rows of parallel running stitch round the motifs within the double lines (fig.4). These rows form a foundation for the buttonholing.

☐ Work the buttonholing over the running stitches, using the lines of the design as a guide to size and placing the stitches close together with the looped edges towards the spaces which will be cut away (fig.5).



4. *Working the running stitch.*

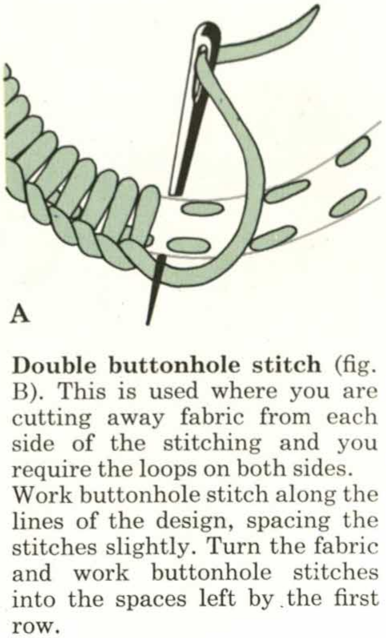


5. *Working the buttonholing.*

Basic stitches

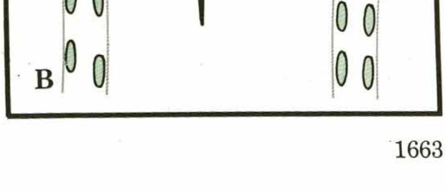
Simple buttonhole stitch (fig. A). This stitch is often used as an edging for fabrics which are to be cut away, eg cut work and scalloping. This is because the tight row of loops formed along one edge prevents fraying. As a general guide to size, make the stitches 2mm-3mm ($\frac{1}{12}$"-$\frac{1}{8}$") high and as close as possible. The stitches are often worked over rows of running stitch which act as a padding and help form a firm foundation.

Work from left to right with the portion of fabric to be cut away facing towards you. Bring the needle through on the lower line of the design and insert it slightly to the right on the upper line. Take a straight downward stitch on the wrong side of the fabric and bring through on the lower line with the thread under the needle as shown. Pull up the stitch to form a loop and repeat, working the stitches closely.



Double buttonhole stitch (fig. B). This is used where you are cutting away fabric from each side of the stitching and you require the loops on both sides.

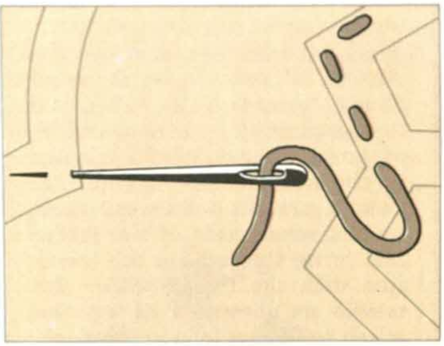
Work buttonhole stitch along the lines of the design, spacing the stitches slightly. Turn the fabric and work buttonhole stitches into the spaces left by the first row.



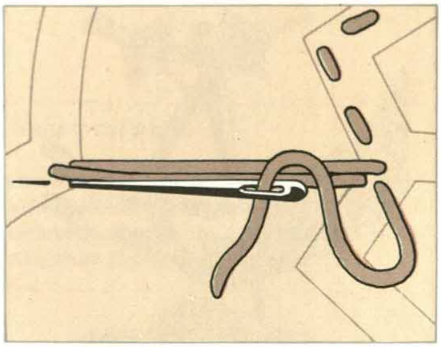
Renaissance work

Start by making a line of running stitch round the motif as described before. When you come to the position of a bar, take the thread across the fabric to the other end of the bar and make a small stitch between the double lines (fig.6a).

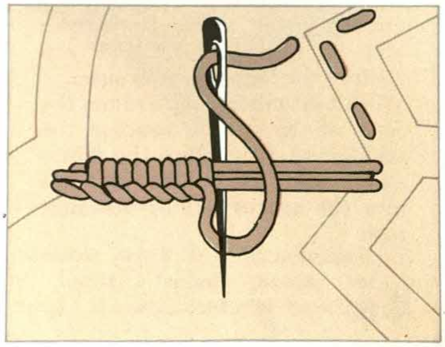
Go back to the first side, make another small stitch within the lines, then return to the opposite side (fig.6b). Cover these three threads, which must be flat on the surface of the fabric, with buttonhole stitch which does not penetrate the fabric beneath (fig.6c).



6a. *Starting a bar.*



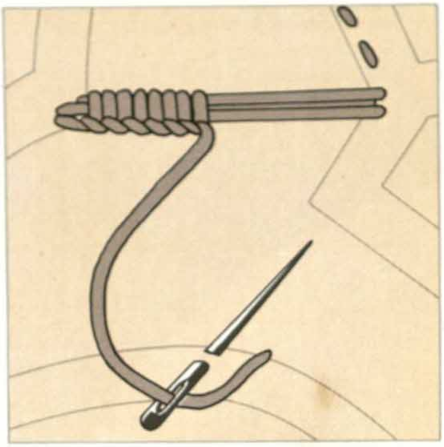
6b. *Laying the third thread.*



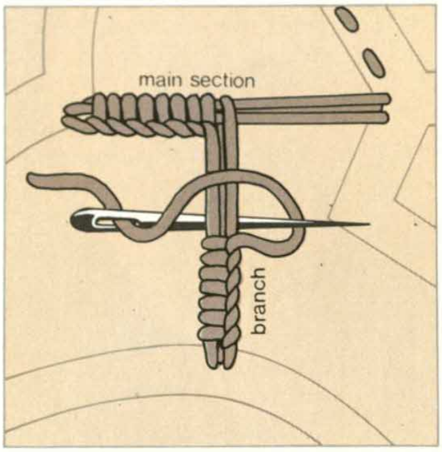
6c. *Buttonholing over the threads.*

When the buttonholing is complete continue the running stitch round the motifs until you reach another bar.

Branched bars. Start the main section of the bar as before with three foundation threads. Work the buttonholing over them until you reach the starting point of the branch, then take the thread across to the other end of the next branch (fig.7a).

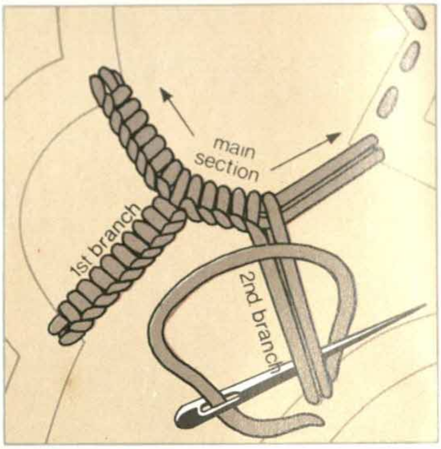


7a. *Starting a branch bar.*



7b. *Buttonholing over the branch.*

☐ Return to the junction point. Take the thread round the foundation threads of the main bar and back to the opposite end of the branch again. Start buttonholing over the threads from the end of the branch back to the junction (fig.7b) and then complete the buttonholing along the main section of the bar. A four- or five-branch bar is worked in a similar way (fig.8). Notice how the main section of the bar is curved to form two of the branches.



8. *Buttonholing over one of the branches of the four-branch bar.*

☐ Work the remaining running stitch round the motifs and then the buttonhole stitching which must cover the ends of the bars.

Paf International

Charming bedspread in Renaissance work, destined to become an heirloom.

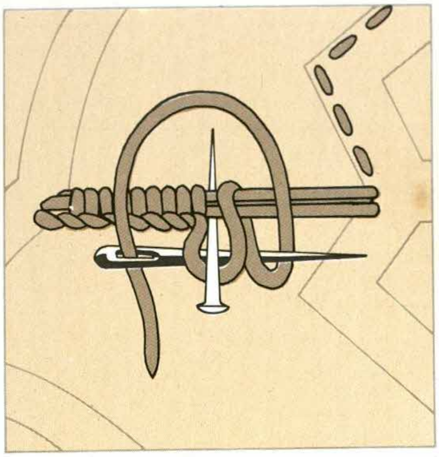
Sandra Lousada

Flowers and leaves linked by scrolls form the motifs in this Renaissance cut work. You could easily copy the design for your own blouse or for corners of a table-cloth.

Richelieu work

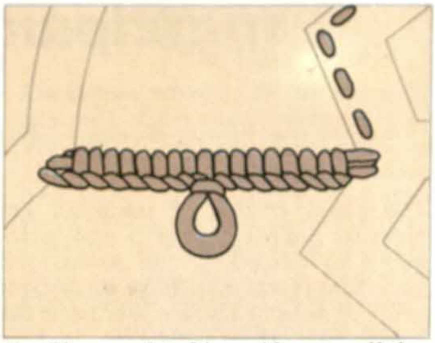
This is worked like Renaissance work except for the picots which are incorporated in the bars.

Simple picots. Lay the foundation threads of the bar and buttonhole over them to the centre. Insert a pin into the fabric at right angles to the bar and underneath it. Pass the working thread under the pin, round the bar and under the loop held by the pin, twisting the thread round the needle as shown in fig.9a.



9a. *Forming a picot.*

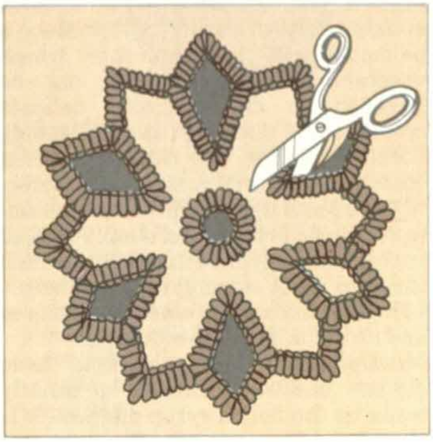
☐ Pull the needle through and pull the thread tightly to secure the picot. Remove the pin and continue buttonholing over the foundation threads (fig.9b).



9b. *The completed bar. Always pull the thread tight to secure the picot.*

Finishing cut work

When all the stitching has been worked, cut away the required areas of background close to the buttonholing (fig.10). Do not be tempted to cut away part of the work earlier or the work will pull out of shape. If you have worked buttonhole bars, be careful that you do not accidentally cut these when you are removing the fabric beneath them.



10. *Cutting away the background. Notice how all the loops of the buttonhole stitches are on the edges to be cut.*

Edges. Where you have placed motifs in the corners of the fabric or perhaps along two sides of it, the most attractive method of finishing the remaining edges is by buttonholing.

When planning the size of a table-cloth or mat to be worked in this way, for example, allow about 2.5cm (1″) extra fabric all round. Mark the double lines of the edges in the same way as for motifs and buttonhole along them with the loops of the buttonholing facing out. Picots may be included along this edge if you wish. Trim off the excess fabric carefully, close to the stitching.

Modelling with marzipan

Edible arts 8

The exact origins of marzipan are obscure. Some say that it was introduced to Europe by the Arabs, and some that it was created by an ancient order of nuns in France. Whatever the beginnings, this sweetmeat is now popular throughout the world—as a covering for cakes, for petits fours, and for moulding into delightful miniature animals and fruit.

Marzipan (or marchpane or almond paste as it is variously called) is a mixture of pounded almonds and sugars bound together with eggs and flavourings. It can be made with or without cooking. Either method will produce a pale-coloured marzipan into which vegetable-based food dyes can be kneaded to create fresh, delicate colours. The uncooked method simply involves mixing the raw ingredients together. This produces a fairly coarse-textured marzipan suitable for moulding into petits fours and simply-shaped fruits. The cooked method, which involves a hot sugar syrup, produces a superior marzipan—smooth textured and ideal for intricate moulding.

Marzipan bought in packets from grocers and supermarkets is usually made by the boiled syrup method. It is therefore fine enough for intricate moulding. It is convenient when you are pressed for time but its distinctive yellow colouring is somewhat restricting.

If you wish to create life-like coloured fruits and animals, use home-made marzipan for these sweetmeats. For top quality taste, don't buy ready-ground almonds—buy whole almonds and blanch and grind them yourself. This gives you the full flavour and oil from the nuts.

Uncooked marzipan

This recipe is suitable for making petits fours and simple fruit shapes. Pristine looks will be lost after about a week but, if stored in an air-tight tin, the marzipan shapes will still taste perfectly all right for 14 days or so.

You will need:

350gm (12oz) freshly ground almonds.
350gm (12oz) castor sugar.
350gm (12oz) icing sugar, sieved.
2 small whole eggs, lightly beaten.
1-2 tablespoons strained lemon juice.
1 tablespoon sherry (optional).
½ teaspoon vanilla essence.
½ teaspoon almond essence.

☐ Mix the almonds, castor sugar and icing sugar together in a mixing bowl.

☐ Make a hollow in the centre of the dry ingredients and add the remaining ingredients.

☐ Mix well with a wooden fork, then turn on to a lightly sugared surface and knead until smooth and free from cracks.

☐ Shape immediately or wrap in polythene and store in a cool place until ready to use.

Boiled marzipan

This recipe can be used for moulding intricate shapes as well as petits fours and simple shapes. The marzipan remains excellent to eat for two months, although it will begin to go hard on the outside and to look a little dusty.

You will need:

450gm (1 lb) sugar.
200ml (7fl oz) water.
350gm (12oz) ground almonds.
2 egg whites, lightly beaten.
1 teaspoon orange flower water.
2 tablespoons lemon juice.
About 4 tablespoons icing sugar, sieved.

☐ Place the sugar and water in a medium-sized saucepan and dissolve over a gentle heat.

☐ When sugar has dissolved, bring to the boil and boil steadily without stirring, until the temperature reaches 115°C (240°F) or the mixture reaches soft ball stage. (For testing syrup without a sugar thermometer, see Edible arts chapter 4, page 1336.)

☐ Remove from the heat and beat well with a wooden spoon until syrup looks slightly cloudy.

☐ Stir in the almonds and lightly beaten egg whites.

☐ Return the pan to the stove and stir over a gentle heat for 2-3 minutes.

☐ Add orange flower water and lemon juice.

☐ Pour the almond mixture on to a marble slab or other suitable work surface which has been sprinkled with icing sugar.

☐ Leave until cold, then knead till smooth.

☐ Mould into shapes or place in a polythene bag and store in a cool place until ready to use.

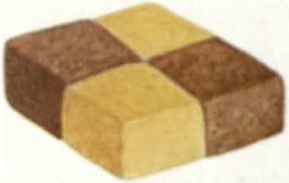
Petits fours

Prettily coloured and interestingly shaped marzipan petits fours are delicious to eat with after-dinner coffee. Here are a few traditional shapes, but it is fun and easy to invent your own designs and colour schemes.

Chequers. Divide the marzipan in two. Leave one half uncoloured and colour

Paul Kemp

Barbara Firth



the other half dark brown with a little cocoa powder or gravy browning powder. Knead through to get an even colour. Make each piece into a roll about 1.25cm (½") in diameter. Place the rolls side by side and push firmly together to join. Cut in half and arrange one half on top of the other to give alternate colours, like a Battenburg cake. Push together firmly with a palette knife and shape into a smooth, straight-sided oblong of chequered marzipan. Then carefully cut into slices about 6mm (¼") thick.

An attractively presented selection of home-made marzipan petits fours is a delicious after-dinner treat which will delight your guests.

Catherine wheels. Divide the marzipan into three equal portions. Using vegetable-based food dyes which are obtainable from a pharmacy or general food store, colour one patch of marzipan bright green, the second pink and leave the third uncoloured. Roll each piece into an oblong of equal size. Place one on top of the other and press lightly with a rolling pin to seal the layers together. Trim the edges to shape if necessary then roll up tightly like a Swiss roll. Cut into slices about 6mm (¼") thick.

Marbles. Divide the marzipan into two, three or four pieces—not necessarily of equal size—and colour each differently. Shades can be contrasting or subtly blended. Lightly knead the four pieces together to obtain a swirling mixture of colours without amalgamating them. Break off small pieces and roll them into small multi-coloured balls. Making marbles is an excellent way of using up marzipan trimmings.

Stuffed dates. Slit the dates, remove the stones and stuff the centres with plain or coloured marzipan rolled into the appropriate shape. Alternatively you can cut the dates in half to remove the stones, and sandwich them back together with marzipan. This method uses more marzipan.

Stuffed walnuts. Make a sandwich by pressing two walnut halves into a

Roger Phillips

Shape coloured marzipan to represent different kinds of fruit. Give the fruit a realistic appearance by texturing, shading and adding stalks.

small oval of plain or coloured marzipan.

Fruits

Break off pieces of marzipan and colour each with a few drops of vegetable-based food dye or, for a brown colour, cocoa or gravy browning. Knead each piece of marzipan thoroughly to obtain an even blend of colouring, then roll into the desired shape.

Use a paintbrush and one colour (or a mixture of dyes) to shade the fruits and give them realistic appearances.

Peaches and plums can be given their characteristic indentation marks with the tip of a teaspoon and, when dry, brushed with icing sugar for bloom.

Roll strawberries and citrus fruits on a fine grater to give them their surface pattern, then toss in a little sugar.

Add stalks, leaves and strawberry hulls for finishing touches. Plastic ones can be bought from specialist confectionery shops or, if you want entirely edible fruits, make your own. Cloves make suitable stalks and calyxes for apples and pears. Slivers of angelica can be used for hulls.

Place the completed fruits on a tray and allow to harden before wrapping and storing.

More intricate shapes

Making marzipan animals and other intricate shapes is simply an extension of the moulding methods already described.

You can design marzipan shapes for special occasions. Edible sculptures make delightful gifts and can be used for personal cake decorations.

Start by making a simply-shaped animal such as a mouse, moulding or cutting the entire animal from one piece of marzipan. Mould the basic mouse shape with your hands as though using clay. Use a thin piece of marzipan for the tail and snip up ear shapes with scissors. Leave overnight to dry before decorating with finishing touches: a dab of royal icing and a touch of melted chocolate could be used to make the eyes; thin trails of chocolate could be used for whiskers.

A hedgehog could be made in much the same shape as the mouse and slivers of split almonds could be used to represent the spines.

More intricate animals and other figures will require separate pieces of marzipan for head, body and limbs. These are moulded individually from separate pieces of marzipan which have been coloured with vegetable-based food dyes—all of the same colour or in different shades. Leave individually shaped pieces to dry overnight and assemble next day, using melted chocolate to 'glue' the pieces together. Piped icing, melted chocolate and other edible goodies can then be used to add decorative detail.

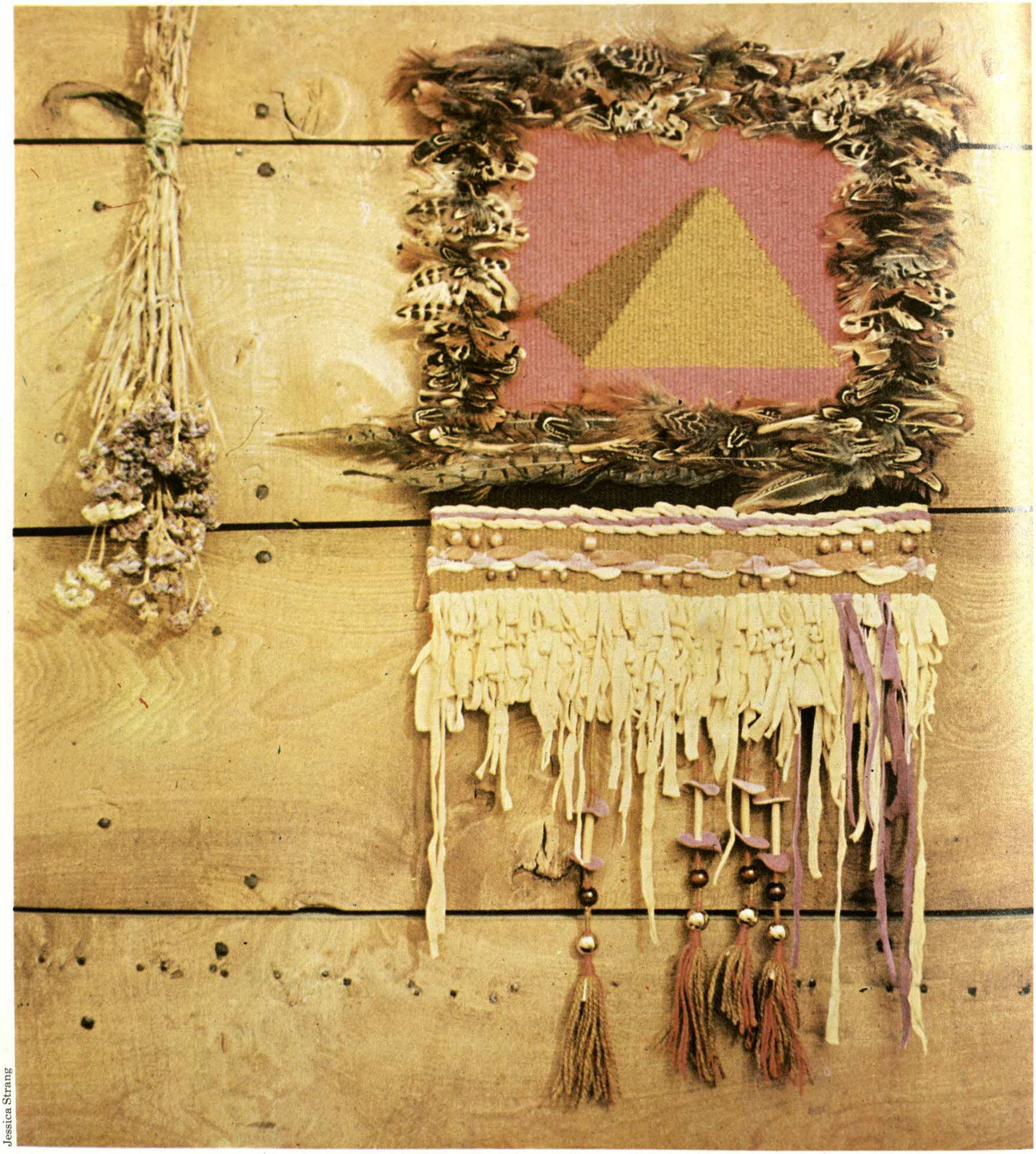
Animals such as the rabbit are made from a 50gm (2oz) chunk of marzipan. Roll the marzipan into three balls to make the body, head and tail. Shape the body; shape up the ears, cut them down the centre and gently ease apart.
For professional results use modelling tools. A greaseproof paper cone with a hole snipped to the thickness required or the size of a number 3 nozzle can be used for a piping bag.

Paul Kemp

INSTITUTE OF EDUCATION FOR WOMEN.
Deptt of Extension Services.
★ CALCUTTA ★

Baubles, beads and feathers

Weaving chapter 19 contains several ideas for using unusual objects and fabrics in weaving. The specific use of many objects combined to make a single tapestry is dealt with in this chapter. The tapestry has a strong simple motif—the pyramid—which is complemented by feathers, chamois, beads and some long wrapped warp ends. The whole effect is decorative without being over-elaborate (some-



Jessica Strang

thing to be avoided when combining many different elements). Even if you do not want to make this particular tapestry it will give you plenty of solid ideas for your own work.

To weave the hanging

The tapestry itself is 45.7cm long and 38cm wide (18″x 15″) with dangling warp ends of 30cm (12″).

You will need:

Cotton twine with a count of 18s for the warp.

100gm (4oz) each of 2-ply carpet wool in mustard, dark brown, cerise and medium brown. The wool is used double throughout unless stated otherwise.

Selection of beads with large holes. You will need about 18 small beads and 8 larger beads.

4 thin bamboo tubes or similar objects measuring about 4cm (1½″).

Frame loom (see Weaving chapter 6, page 572) and bobbins.

Pliers and needle with very large eye.

Offcuts of soft suede and chamois, preferably in different colours.

Feathers about 10cm (4″) long. These in the hanging are pheasant feathers (about 10 handfuls) but any small feathers with a long central shaft will do.

Setting up the frame

☐ Using the cotton twine, put on a warp of 40cm (15½″) so that you have a sett of six ends per 2.5cm (1″) (see Weaving chapter 10, page 824).

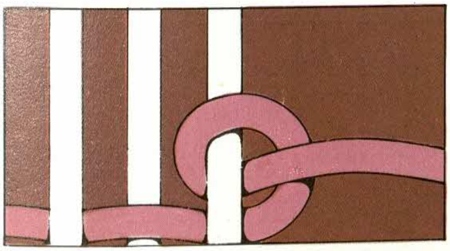
Starting to weave

☐ Use all the wool double throughout unless otherwise stated.

☐ Push the cross sticks of the loom up to 30cm (12″) from the bottom of the frame. The unwoven warps will be wrapped after the tapestry has been finished.

☐ Weave 1.25cm (½″) using any colour wool. This area will be completely covered by rows of chamois leather and you can use any spare wool of the right thickness.

☐ Loop the bobbin in a half hitch (fig.1) around the selvedge after the last row has been completed. This keeps your weaving intact and allows the bobbin to hang down while the rows of chamois are put in.



1. *Use a half hitch to hold the yarn neatly when you have temporarily finished with that colour.*

Left: a simple pyramid motif decorated with beads, chamois leather and feathers to create a textural hanging. Tapestry designed by Candace Bahouth.

Chamois

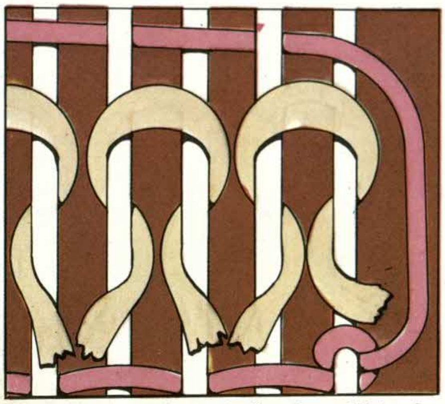
The chamois fringe is created by tying rows of Ghiordes knots with individual strips of chamois leather.

☐ Cut the chamois into strips about 1cm (⅜″) wide and the longer the better. Do not cut them all the same length as an uneven fringe is desired.

☐ Make a row of Ghiordes knots with chamois strips (see Weaving chapter 11, page 856). Use every warp end.

☐ Either use individual pieces of chamois or one long strip leaving loops. You can create the fringing effect like a shingled roof by making the tails of the knots an irregular length. Be careful not to skimp on the chamois or you will lose the textural effect.

☐ After you have completed one row of knots pick up the bobbin and weave a strengthening row of yarn. Make sure that you pick up on the correct shed as the row of knots will have lost the under over sequence (fig.2).



2. *Suede or chamois leather Ghiordes knots create the attractive fringe.*

☐ Weave another 1.25cm (½″) with yarn. This area will again be covered so you can continue using up scraps of yarn of the right thickness.

☐ Put in another row of chamois knots, followed by another 1.25cm (½″) of yarn.

☐ Continue in this way until you have four rows of chamois leather fringing.

☐ After the last row of chamois, weave 1.25cm (½″) but this time use the mustard yarn.

Putting in the beads

☐ Cut a piece of mustard yarn slightly wider than the warp width.

☐ Thread half the smaller beads on to it but do not worry at this stage about their position.

☐ Make a half hitch around the selvedge with the end of the beaded yarn and weave across the warp, positioning the beads where you want them to go.

☐ Secure the thread with a half hitch at the other end of the warp.

Detail of the irregular chamois fringing made with the knots.

☐ Weave two or three picks to secure the row of beads.

Strips of chamois and suede

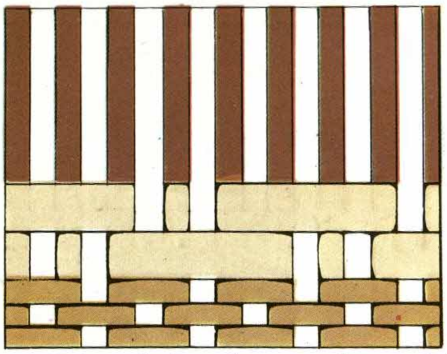
☐ When using thicker material such as suede as textural weft on a plain warp, a bunched up appearance is probably best so that the uncovered warp does not ruin the effect. Choose soft, flexible chamois leather or suede so that it can be beaten down.

☐ Cut long strips of the material about 1.25cm (½″) wide.

☐ Weave across with a strip of chamois or suede missing out as many intermediate warp ends as you wish. If your strip is not long enough to go right across the warp, tuck the end behind the last warp end and begin with another strip.

☐ Finish off the row with a half hitch so that the end is tucked behind.

☐ Weave in the next row of suede going under at least two of the warp threads covered before (fig.3).



Trevor Lawrence

3. *Strips of chamois or suede can be bunched up together for texture.*

☐ Weave the last row of suede.

More beads

☐ Weave 2cm (¾″) using the mustard

yarn and putting in a row of beads half-way up.

Soumak

☐ Cut some more strips of chamois and suede about 6mm (¼″) wide and as long as possible.

☐ Start off the row of chamois or suede with a half hitch and work a row of soumak stitch going over four ends and back two (see Weaving chapter 11, page 856).

☐ Weave three rows of soumak with two rows of strengthening yarn in between each row.

☐ Weave 2.6cm (1″) in the dark brown yarn. Not only is this a design feature, it also strengthens the fabric and stops the feathers from overlapping the soumak stitch.

The feathers

☐ Before starting, use your fingers to make the shafts flexible. No matter how small the feathers are, you must still manipulate the shafts.

☐ Choose feathers with shafts long enough for two warp ends to go behind them so feathers are secured. To weave a row of feathers, weave in the shaft part so that the tips of the shafts are pushed to the back, (see Weaving chapter 19, page 1614). Overlap the feathers so that only the fluffy parts are showing.

☐ To achieve a balanced effect, alter the direction of the feathers half-way along so that they lie outwards on each side of the tapestry.

☐ Push the feathers down gently and when you have done a row secure them in position by weaving one pick with yarn in the same shed.

☐ Weave two more picks of yarn.

☐ Do another row of feathers followed by a few rows of yarn.

☐ Repeat this process until you have a 5cm (2″) band of feathers. If your feathers are getting too thick after a few rows you can compensate for this by increasing the number of picks of yarn woven between each row.

☐ After the last row of feathers start weaving with the cerise-coloured yarn.

The central area

The top section of the hanging consists of a central area 28cm wide x 21.7cm high (11″x 8½″) plus a 5cm (2″) frame of feathers (fig.4).

☐ Weave 1.25cm (½″) in the cerise to hold the feathers down.

☐ Count in 12 warp ends from either side. This should give you the two side frames for the feathers.

☐ Put in more feathers in these side areas and weave right across the warp in the same shed.

☐ Continue this process of weaving right across the warp and filling in the side panels with feathers.

☐ As the feathered panels are built up the middle section will obviously get out of line and you will have to make up for this with extra rows of weft in the central area.

☐ If you have to cut your feathers to get them small enough for these side areas remember to make sure that at least two warp ends are going behind the feather to keep it firm.

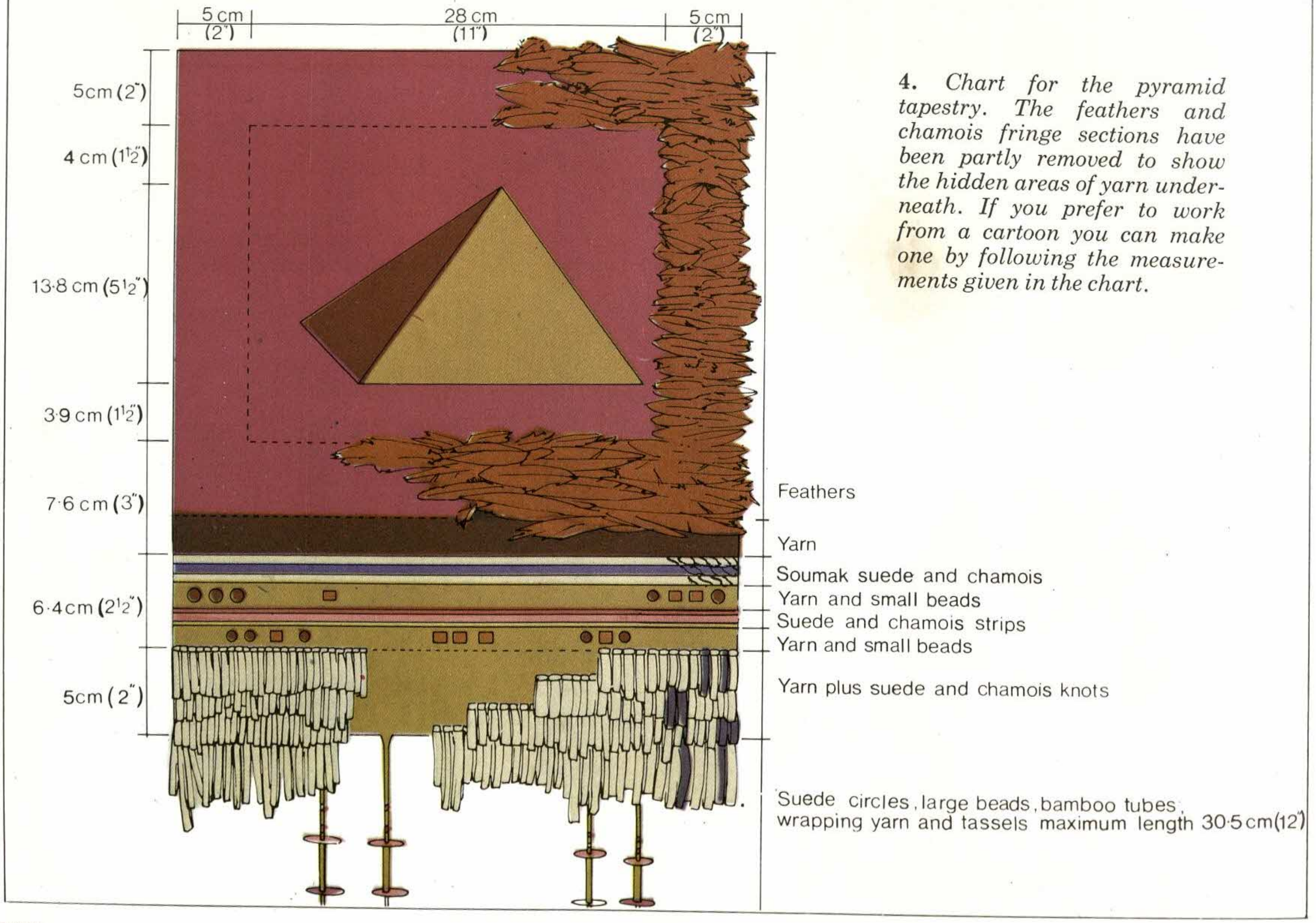
☐ After about 3.75cm (1½″) of cerise, take a single strand of your yarn and weave one pick with it. This will create a clear-cut straight line for the base of the pyramid.

The pyramid

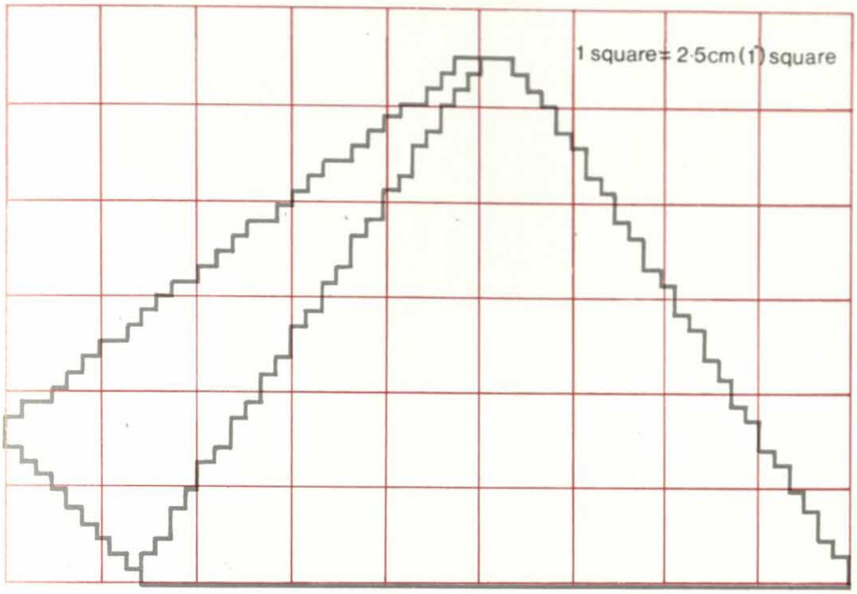
☐ Make a full size cartoon of the pyramid image. Each square in fig.5 represents 3.9cm (1″) square. If you hang the cartoon behind the loom it will help you to create a clear-cut edge to the motif.

In the cartoon each small pyramid 'step' represents two picks of weaving and larger 'steps' represent four picks. No interlocking is necessary, so simply follow the cartoon and weave the first 5cm (2″) of the mustard design. (Remember: two picks for a small step and four picks for a long step.)

Caution. As all weavers vary in their



4. *Chart for the pyramid tapestry. The feathers and chamois fringe sections have been partly removed to show the hidden areas of yarn underneath. If you prefer to work from a cartoon you can make one by following the measurements given in the chart.*



5. *The cartoon for the pyramid motif. Each small step in the design represents two weaving picks and each large step represents four.*

beating down you may find that the two picks per short step may not be completely accurate for you. Follow the cartoon as a check and do more or less rows to compensate if necessary. Do not forget to weave slightly higher than the outline to allow for beating down.

☐ You can now return to the cerise background and the feathered panels. Work about 3.5cm (1½") on both sides of the pyramid until you reach the furthest corner of the pyramid (medium brown area).

The designer, Candace Bahouth, putting in the last few feathers.

Jessica Strang

☐ Introduce the brown weft for the 'shadowed' side of the pyramid and work each area of weft bit by bit building up the whole of the design in stages. Remember that you must always have woven the area directly beneath so that you can beat down.

☐ Watch the step pattern of the pyramid constantly as the angled inclines are irregular and differ between the mustard and brown areas.

☐ When the pyramid is complete, weave the cerise background and feathers until they are level with the top of the pyramid. Then continue to weave for about 4cm (1½") from selvedge to selvedge.

☐ Complete the frame of feathers by putting in another 5cm (2") at the top and make sure that the last row is very compact and full to prevent a balding appearance at the top.

☐ Weave at least two rows of yarn after the last row of feathers to hold the band in place.

Wrapping the fringe elements

Most of the cotton warp at the bottom is darned back neatly but some of the ends are wrapped and left dangling as a design feature.

Each of these hanging elements is made by wrapping three threads together (see Weaving chapter 12, page 892).

☐ Take three threads in the position you wish the element to be and, using wool, wrap the top 8cm (3") from the weaving down.

☐ Cut out circles of suede about 2.5cm (1") in diameter and make a hole in the centre.

☐ Cut the three warp threads as close to your frame as possible and using a needle, thread all of them one at a time through one of the suede circles.

☐ Thread on a bamboo tube, another circle and the larger beads in the order you want them.

☐ Knot the three warp ends together and retie them to the bottom of the frame with an extra piece of twine.

☐ Wrap the threads positioning the suede, bamboo and beads as you need them and thread the wool through the holes. Use pliers to pull the needle through the bamboo tube.

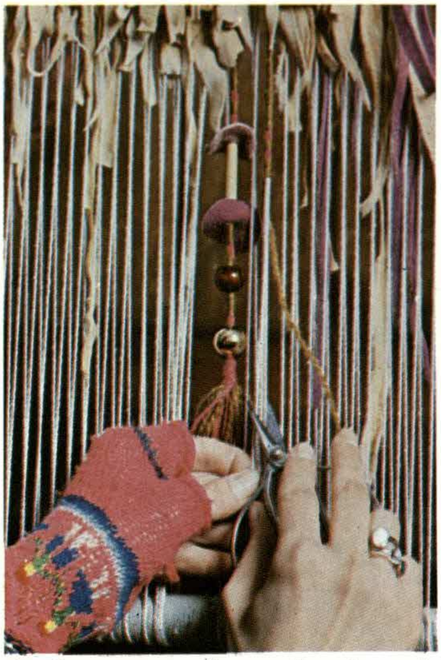
☐ Change the colour of the wool as you wish.

☐ If the holes in the beads are too big and they slip over the wrapping you will have to make the wrapping immediately under the beads extra thick by going over the threads more than once.

☐ Finish off the hanging element by adding a tassel.

☐ Untie the warp threads from the frame and tie around a group of wool lengths to make a tassel (see Weaving chapter 12, page 892). Wrap around the wool lengths.

☐ Make as many hanging elements as you wish although too many may spoil the effect.



Cutting a group of warp threads ready to thread on the beads and suede.

Finishing off

☐ Cut the tapestry off the loom.

☐ Make a clean edge at the top by cutting the looped ends and darning them back into the hanging in the manner described for the cushion cover in Weaving chapter 11, page 856.

☐ Sew in the bottom warp ends which were not wrapped. Although these are covered by the chamois fringe, be equally painstaking about finishing off the bottom ends or all your hard work will start to unravel in time.

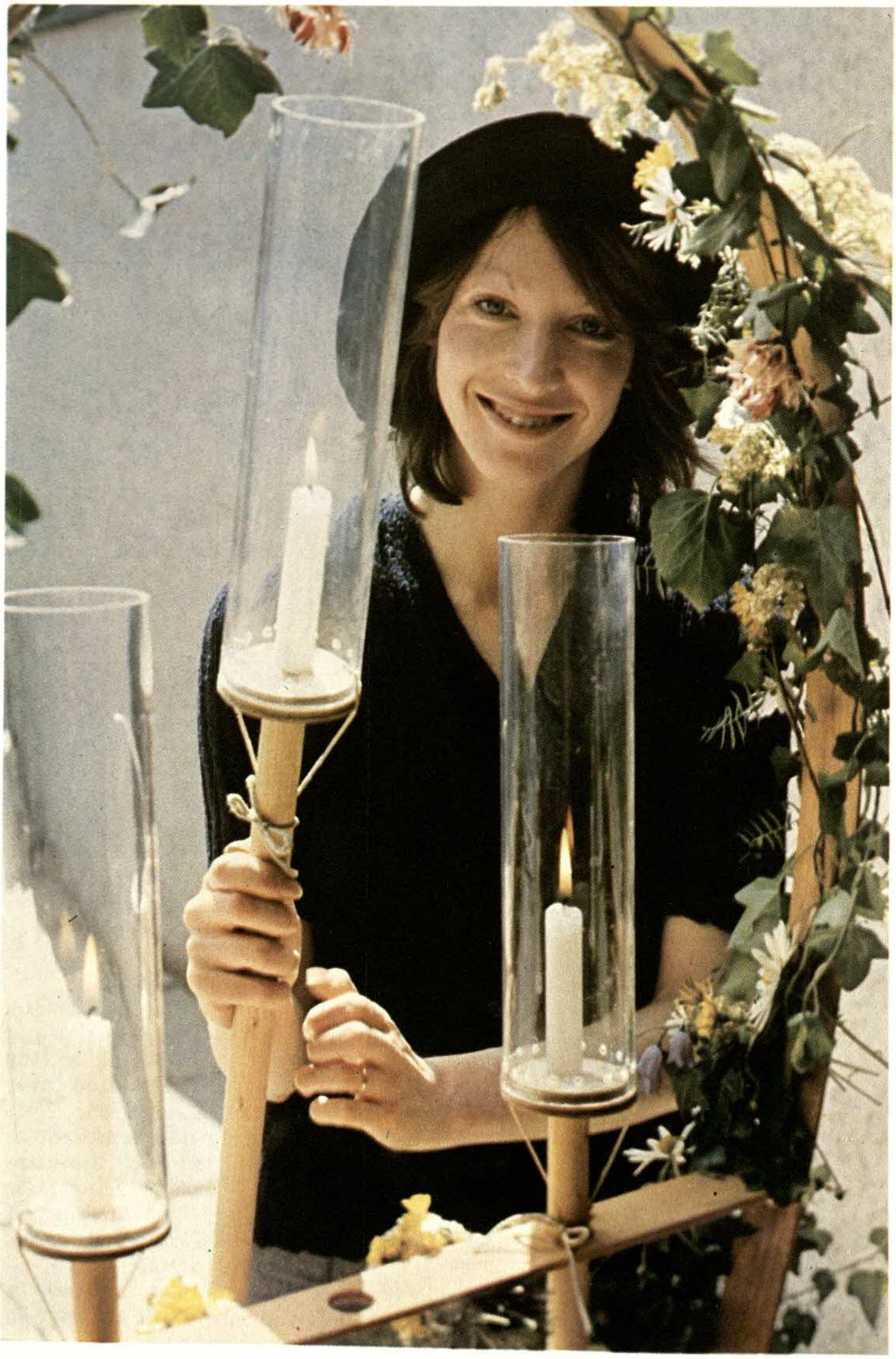
☐ Darn in the weft ends and sew a wide loop to the back of the top edge so that the tapestry can be hung.

Two acrylic candle holders

Plastics 22

The translucent qualities of acrylic make it an ideal material for use in lighting systems. In this chapter acrylic tubing is used to make two different sorts of candle holder—one which will stand on a table and can be used, for example, as a centre piece for a dinner party, and another which is attached to a long handle and can be stuck in the ground to provide lighting for outdoor events such as barbecues. These basic units can be used to create attractive displays such as the one shown here which comprises three torch lights slotted into a wooden holder, decorated with flowers and leaves.

Acrylic tubing can be bought in specialist plastics shops, or in some hardware or DIY shops.



Liz Whiting

Torch light

This candle holder is made from an acrylic tube which is slotted over a wooden base attached to a long handle. It will hold one candle 2.5cm (1") in diameter, not longer than 28cm (11").

You will need:

Materials

Acrylic tubing 8cm (3") outside diameter, 3mm ($\frac{1}{8}$") thick wall, 30cm (12") long.
Plywood 18cm x 10cm (7" x 4"), 6mm ($\frac{1}{4}$") thick.
Broom handle 3cm (1$\frac{1}{4}$") diameter, as long as you like.
Dowelling 6mm ($\frac{1}{4}$") diameter, 2.5cm (1") long.
One no.8 screw 3cm (1$\frac{1}{4}$") long.
Two 20cm (8") lengths of twine for attaching tube to base.
Polyurethane varnish or coloured gloss paint.
Silicon carbide paper, medium and fine.
Glasspaper, medium and fine.
Piece of wood to fit inside the tube to support the sides of the tube during drilling.
Masking tape.
Metal polish such as Brasso and a soft cloth for polishing the cut edges of the tube.
Acrylic glue such as Tensol No.6.
PVA adhesive such as Evo-stik.
One small sable brush such as a Reeves No.6.
One 2.5cm (1") paintbrush.

Tools

Hand drill with one 3mm ($\frac{1}{8}$") metal bit and one 6mm ($\frac{1}{4}$") metal bit.
Hack saw, coping saw, bench hook.
G-clamp.
Vice.
Wood file.
Pair of compasses, pencil.

Cutting the acrylic. Wrap all outer surfaces of the acrylic tube in masking tape.

☐ If the acrylic was not bought cut to size, cut the tube to the required length.

☐ Using a pencil, mark off a length of 30cm (12") on the tube.

☐ Cut just outside the pencil line following instructions for cutting acrylic tube in Plastics chapter 21, page 1690.

Drilling air holes. The next step is

Left and right: finished torch lights designed by Jerry Tubby.

Liz Whiting

to drill air holes round the bottom of the tube. To stop the acrylic cracking during drilling, wedge a suitably sized piece of wood down the tube to support the sides.

☐ Wrap the tube in a cloth to protect from pressure and secure in a vice.

☐ Using the hand drill with a 3mm (⅛″) metal bit drill a hole 1.25cm (½″) up from one end of the tube.

☐ Move the tube into position for the next drilling and make another hole 1.25cm (½″) up from the end of the tube and 1.25cm (½″) apart from the first hole.

☐ Continue with this until you have drilled holes all the way round one end of the tube.

Finishing the edges. Finish the cut ends of the tube using the file, silicon carbide paper and metal polish as described in Plastics chapter 21.

The insides of the air holes can be polished using a different method.

☐ Leaving the masking tape on the tube, carefully paint the inside of each air hole with a small amount of acrylic glue.

You will find that the glue will give the insides of the drilled holes a smooth surface.

Be careful not to get any of the glue on either inner or outer surface of the tube as it will pit and distort a surface which is already smooth. The tube is now complete. The next step is to make a base on which the tube will stand.

The base consists of two plywood discs stuck together and screwed on to a long handle. The acrylic tube fits over the smaller disc and rests on the larger disc (fig.1).

☐ Using a compass draw two separate circles on to the plywood—one of 8cm (3″) diameter, and one of 7.4cm (2¾″) diameter.

☐ Using a G-clamp to secure the wood, cut out the two discs with a coping saw.

☐ Smooth off any uneven edges with a wood file, and then finish off with medium and then fine glasspaper.

☐ Using PVA adhesive stick the smaller disc on top of the larger one leaving a 3mm (⅛″) rim round the edge.

☐ Drill a hole 3mm (⅛″) diameter in the centre of the plywood discs and the centre of the top of the broom handle to accommodate the screw.

☐ Using the 3cm (1¼″) screw, attach the plywood base to the broom handle, (fig.1).

☐ Using the hand drill with the 6mm (¼″) bit, drill a hole in the side of the broom handle 8cm (3″) from the top, 6mm (¼″) deep.

☐ Glue the dowelling into the hole with PVA adhesive.

☐ Using the fine glasspaper, sand off any rough edges on the base and handle.

☐ Using the 2.5cm (1″) paint brush apply one coat of varnish to the handle and the bottom and sides of the base, leaving the top unvarnished.

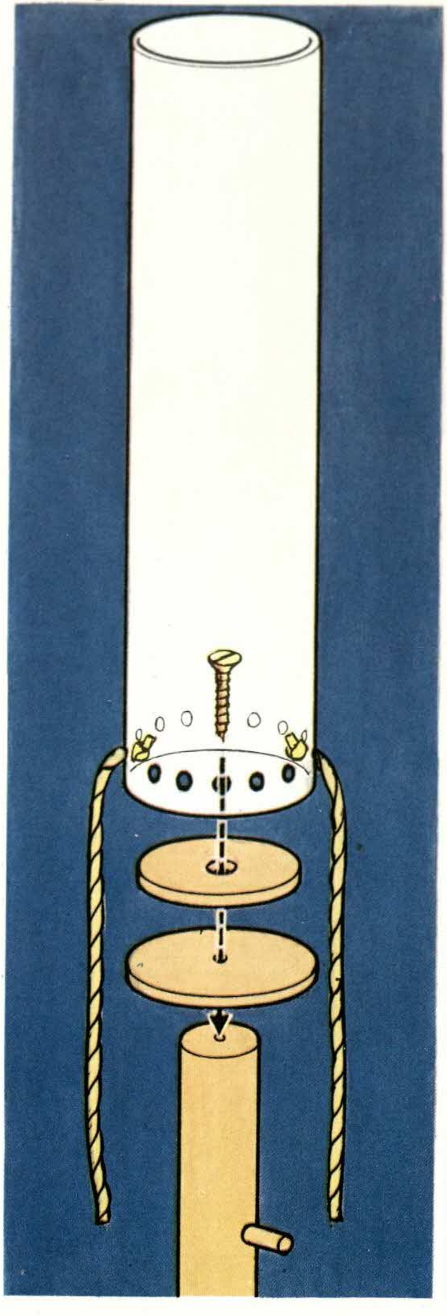
☐ Leave to dry and apply a second coat.

Alternatively the base could be painted with coloured gloss paint.

To secure tube to base tie a knot in one end of each of the lengths of twine and thread through air holes on opposite sides of the tube leaving the knots on the inside of the tube.

☐ Slot tube over base, cross twine underneath dowel peg, round broom handle and tie a knot. The torch light is now complete.

1. *The acrylic tube, two plywood discs, broom handle, dowel and pieces of twine are assembled as shown to make the torch light.*



Above: the table light will add a romantic touch to outdoor dinner parties. Designed by Jerry Tubby.

Table light

This unit will hold 3 to 4 ordinary household candles 2.5cm (1″) diameter.

You will need:

Tools, varnish and paint as for torch light.

Acrylic tubing 15cm (6″) outside diameter, 3mm (⅛″) thick wall, 30cm (12″) long.

Plywood 17cm x 32cm (6½″x 13″), 6mm (¼″) thick.

☐ Cut acrylic, drill air holes and finish off tube as for torch light.

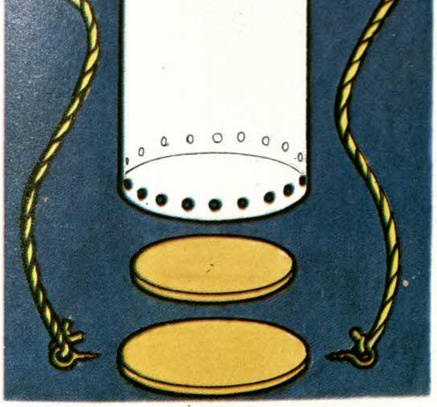
☐ Cut out plywood discs—one of 15cm (6″) diameter, one of 14.4cm (5¾″) diameter, stick together and varnish as for torch light.

☐ Fit the tube over the base and the table light is complete.

By adding eyelets and twine as shown in fig.2, both the table light and the torch light (minus handle) can be made into hanging lights.

Liz Whiting

Below: flames of the candles are protected by the acrylic tube.


Paul Williams

2. *Assembly of a hanging light.*

Liz Whiting

Padded footstool from a box

Cloth — upholstery 7

Previous upholstery chapters have described how to roll the edges of foam padding to form a curved edge. Here you are shown how to keep a square edge with a piped cover for a more tailored finish and how to use this technique to make a footstool from a wooden box.

You will need:
Wooden box. Choose a sturdy box, such as an old bottle crate, with a firm base. The box is inverted so that the base forms the top of the stool.
Fine glasspaper.
Tack hammer and lifter.
Staple gun (optional).
Drill and 3mm (⅛") drill bit.
Scissors, tape measure.
Several 1cm (⅜") fine upholstery tacks.
Adhesive (such as Bostik 1).
Foam (two pieces are required): measure the base of the box and buy a piece of 5cm (2") thick foam to the same dimensions plus 1.5cm (½") each way. Measure the perimeter of the box and the height, add 5cm (2") to the height and buy a piece of sheet foam to these dimensions.
Calico. For the lining allow enough calico to cut separate pieces for each side and the base of the box plus 10cm (4") all round each piece. For attaching the 5cm (2") thick foam allow enough to cut a 7cm (3") strip to fit each side plus 2.5cm (1").
Cover fabric. Buy the same total amount as for the calico.
Piping cord (No.3 size) and adhesive tape (any width) to fit the perimeter of the box plus about 5cm (2").
Handles (optional).
Sewing thread to match calico and cover fabric.

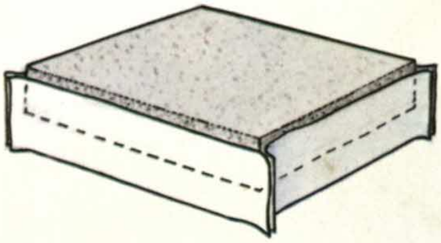
The padding

Preparing the box. Smooth the sides and base of the box by rubbing all over the outside with the glasspaper. Drill 6-8 holes through the base at 15cm (6") intervals to allow ventilation for the foam.

The calico strips. Fold each strip in half lengthwise and press the fold with your fingers to form a crease.

☐ Open out the strips and spread adhesive on one of them from the raw edge up to the crease line. Spread adhesive on the corresponding edge of the foam.

☐ Press the sticky part of the calico on to the sticky edge of the foam so the non-sticky part of the strip extends beyond the edge of the foam (fig.1).



1. *Calico strips stuck to the foam.*

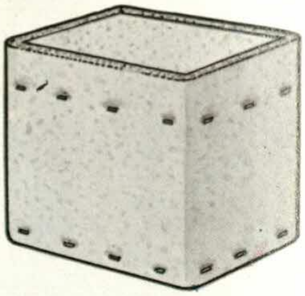
Repeat for the remaining strips.

Attaching the foam. Turn the box so that the base is uppermost and place the foam on to it so that the calico strips are hanging down the sides.

☐ Temporary-tack the strips to the sides of the box about 1.5cm (½") from the top of the box, placing one tack in the centre of each side, then one at each end and then at 5cm (2") intervals in between (fig.2). The foam should be completely flat on the top and the calico strips should be smooth.

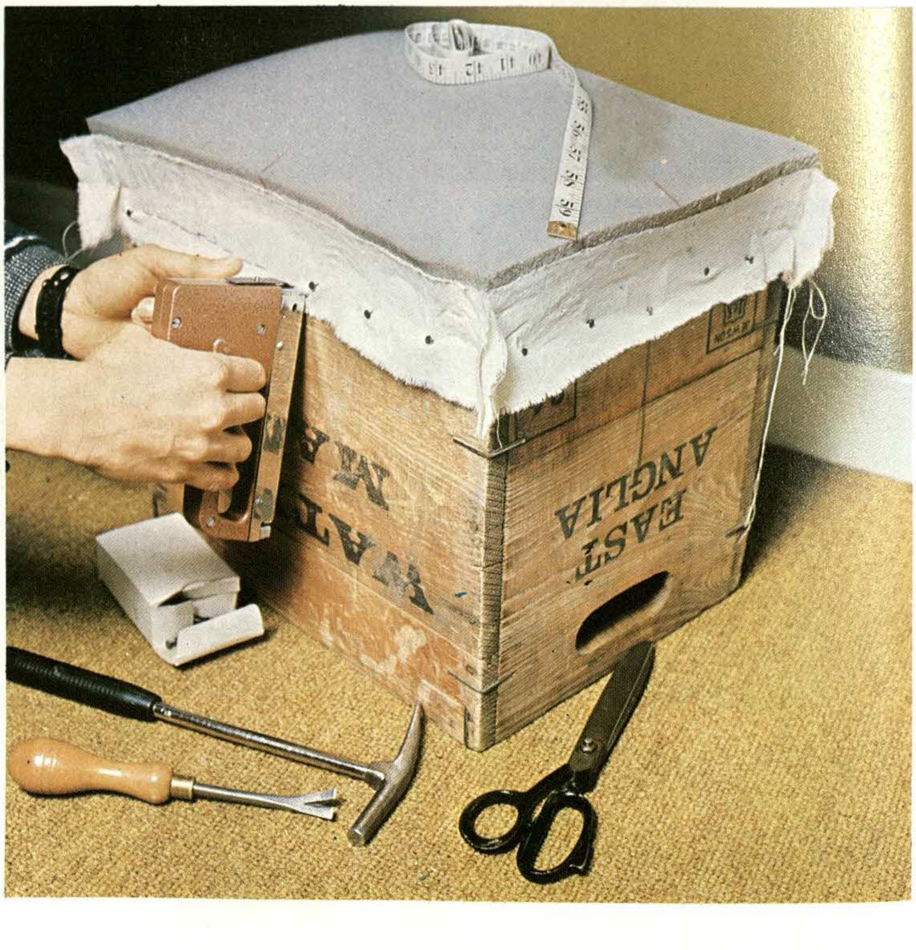
☐ If you are using a staple gun, replace each tack with a staple and then fill in with more staples so they are as close as possible. If you are not using staples, hammer the tacks down and add more tacks so they are 1.5cm (½") apart. Trim off the excess calico.

Padding the box sides. Wrap the sheet foam round the sides of the box so that the foam covers the calico strips and the bottom edge is level with the open end of the box. Secure with a few staples or tacks on each side (fig.3).



Paul Williams

3. *Sheet foam wrapped round box sides.*



2. *Replacing tacks with staples, before trimming off excess calico.*

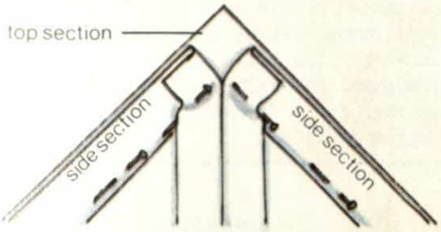
Peter Kibbles

Covering the box

Calico lining. Re-measure the sides of the box to include the foam padding. Cut pieces of calico to fit the top and each side allowing 1.5cm (½") for turnings all round except at the bottom edges of the side sections where you should allow 2.5cm (1").

☐ Machine stitch the side sections together down their corresponding edges to within 1.5cm (½") of the top and 2.5cm (1") of the bottom. Press.

☐ With right sides together, pin the calico top section to the top edge of the stitched side section so that the corners of the top section match the seams on the sides (fig.4). Machine stitch and press the turnings on to the side section and turn right side out.



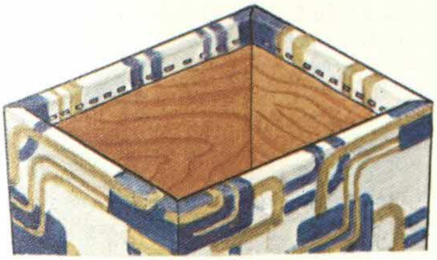
4. *Pinning side section to top.*

☐ Fit the lining over the box and pull down firmly (it will be a snug fit). Staple or tack it to the box just above the open end and trim excess.

Main cover. Cut out the main cover fabric as for the calico lining and stitch the side sections together as before. From the remaining fabric cut 4cm (1½") wide bias strips for piping (Sewing chapter 6, page 400).

☐ Make up the piping to fit along the top edge of the side section and machine stitch in place. Clip into the turnings of the piping casing at each corner. Stitch the top section to the sides as for the lining, but with the piping sandwiched between the two layers.

☐ Fit the cover on to the box, pull the raw edge over the open end and staple or tack inside the box (fig.5).



5. *Cover stapled inside the box.*

Cover the raw edges of the fabric with the adhesive tape.

☐ Attach handles to the sides of the box if desired.

This unusual velvet-covered footstool was made by padding an old wooden bottle crate with foam.

Melvin Grey

Ergonomics: proportions for chairs

Design know-how 60

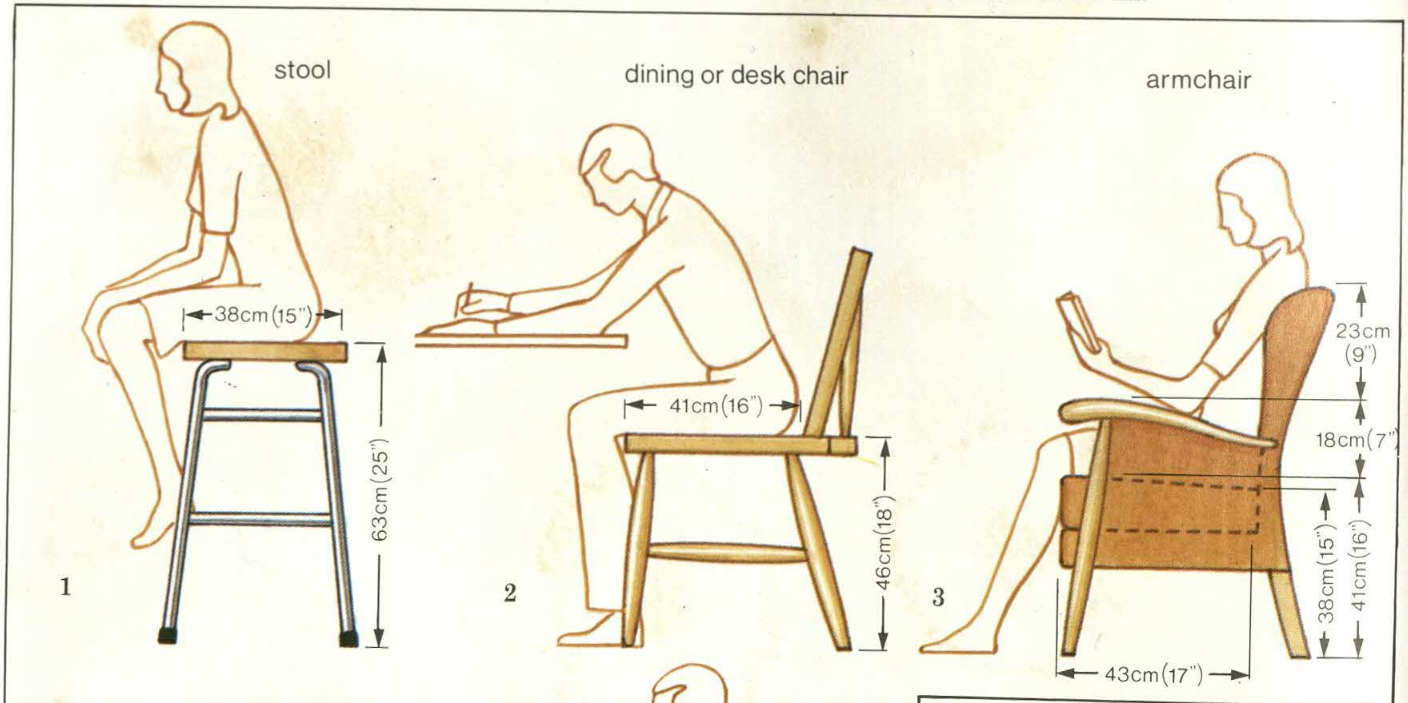
The science of using the measurements of the human body to create a comfortable, functional environment is called ergonomics. This science can be used in many different fields of design to ensure that an object will be well suited to its purpose. Ergonomics covers a very wide area—from cars and furniture, to buildings and even whole towns. All these can be made more convenient and easier to use if practical considerations about the human body are made during the design stage.

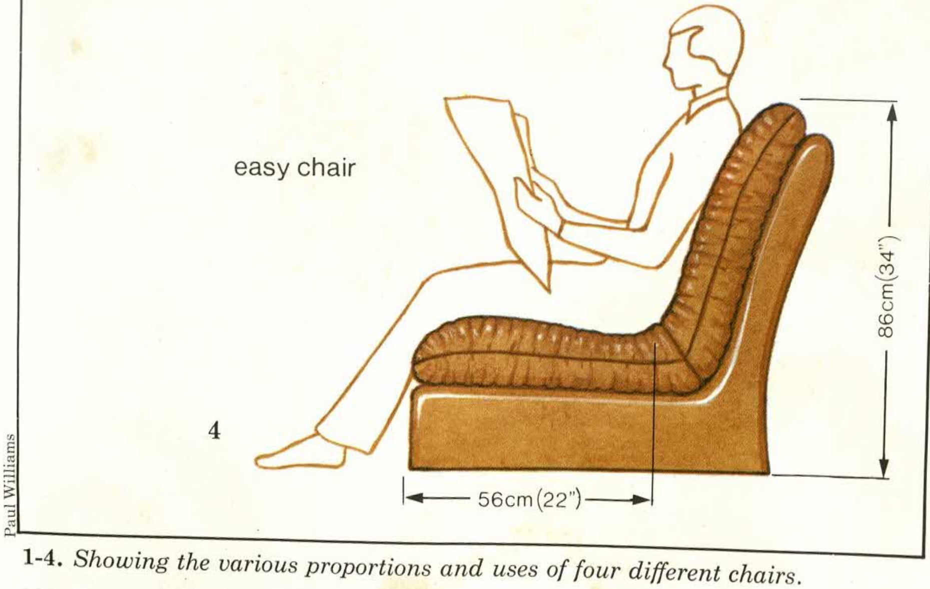
Ergonomics is of particular relevance in craft work. Anything you make—handbag, table, desk lamp or whatever—will be easier to design and more convenient to use if first you think about how you are going to use it.

Some aspects of ergonomics are plain common sense, for other aspects it is necessary to know some measurements.

In this chapter measurements that have been worked out using ergonomics are given for the height and depth of various types of chairs. By following the measurements in the diagrams you can be assured of maximum comfort in a chair you are buying, making, or restoring.

Chairs and stools. The sitting position is half way between lying and standing. When you stand up all your weight is supported on your feet. When you lie down your weight is evenly distributed. The nearer to a standing position you get, the more weight is supported on your feet. This means that the seat on a high stool or dining chair need not be very deep, since the occupant is normally leaning forward and some weight rests on the feet. However, the seat on a low easy chair designed for relaxing must be deep enough to sit back in with no weight on the feet at all.





Paul Williams

1-4. *Showing the various proportions and uses of four different chairs.*

Look at fig.1. The girl on the stool is perching on the seat and a lot of her weight is supported on her feet. Therefore the seat on the stool need be only 38cm (15″) deep. A dining or desk chair (fig.2) is lower and supports more of the weight, but as the occupant will be sitting forward most of the time to work or eat, some of the weight will still be resting on the feet. The seat of an armchair (fig.3) is a little deeper than a dining or desk chair. The chair is lower and it is more likely that the occupant will want to sit back in a relaxed position.

An easy chair (fig.4) is designed for lounging and relaxing. It is a much lower chair and has a very deep seat, enabling the occupant to sit right back and take all weight off the feet.

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